

Service Manual



The photo shows the model KPH-4830/EW

ORDER NO.
CRT-474-0

EW,ES

EW

WG

CASSETTE CAR STEREO WITH TUNER

KPH-4800

CASSETTE CAR STEREO WITH TUNER

KPH-4830

CASSETTE CAR STEREO WITH TUNER

KPH-4800SDK

• Cassette Mechanism Unit

See the Service Manual CX-152/A (CRT-467-0) when servicing the cassette mechanism unit.

SPECIFICATIONS

General

Power source	14.4V DC (10.8–15.6V allowable)
Grounding system	Negative type
Max. current consumption	5A
Dimensions (chassis)	180(W) x 50(H) x 150(D)mm (front face) 188(W) x 58(H) x 10(D)mm
Weight	1.7kg (KPH-4800/EW, ES, KPH-4830/EW) 1.8kg (KPH-4800SDK/WG)

Amplifier

Maximum power output	20W+20W
Continuous power output	13W + 13W (1% dist. at 1kHz)
Load impedance	4Ω (14–8Ω allowable)
Tone controls (bass)	±10dB (100Hz)
(treble)	±10dB (10kHz)
Loudness contour	+12dB (100Hz), +7dB (10kHz) (volume: -30dB)

Tape player

Tape	Compact cassette tape (C-30–C-90)
Tape speed	4.76cm/sec. (+0.14cm/sec., -0.05cm/sec.)
Fast forward/rewind time	Approx. 100 sec. for C-60
Wow & flutter	0.15% (WRMS)
Frequency response	Metal: 50–17,000Hz (±3dB) Normal: 50–14,000Hz (±3dB)
Stereo separation	45dB
Signal-to-noise ratio	52dB (IEC-A network)

NOTE:
Exploded View (Page 16)

CX-152/A		KPH-4800SDK/WG	
Mark No.	Part No.	Description	Part No.
★ 22.	CXM-114	Motor	CXM-115

FM tuner

Frequency range	87.5–108MHz (KPH-4800/EW, ES, KPH-4830/EW)
Usable sensitivity	12dBf (1.1μV/75Ω, mono)

50dB quieting sensitivity	17dBf (1.9μV/75Ω, mono)
Signal-to-noise ratio	70dB (IEC-A network)

Distortion	0.3% (at 65dBf, 1kHz, stereo)
Frequency response	50–12,000Hz (±3dB)

Stereo separation	40dB (at 65dBf, 1kHz)
MW (AM) tuner	

Frequency range	530–1,600kHz
Usable sensitivity	18μV (25dB) (S/N: 20dB)

Selectivity	30dB (±9kHz)
LW tuner (KPH-4830/EW)	

Frequency range	150–280kHz
Usable sensitivity	180μV (45dB) (S/N: 20dB)

Selectivity	30dB (±9kHz)
-------------	--------------

Note:

Specifications and the design are subject to possible modification without notice due to improvements.

PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS [USA] INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
TEL: (800) 421-1404, (800) 237-0424

PIONEER ELECTRONIC [EUROPE] N.V. Keetberglaan 1, 2740 Beveren, Belgium TEL: 03/775-28-08
PIONEER ELECTRONICS AUSTRALIA PTY. LTD. 178-184 Boundary Road, Braeside, Victoria 3195, Australia
TEL: (03) 580-9911

CONTENTS

1. CONNECTIONS	1
2. OPERATION	2
3. PARTS LOCATION	3
4. DISASSEMBLY	4
5. CIRCUIT DESCRIPTION	5
6. DIAL STRINGING	16
7. ADJUSTMENT	
7.1 FM IF Adjustment	18
7.2 FM Tracking Adjustment	19
7.3 FM MPX Adjustment	20
7.4 SDK Decoder Adjustment	20
7.5 AM (MW/LW) IF Adjustment	21
7.6 AM(MW) Tracking Adjustment	22
7.7 LW Tracking Adjustment	
(KPH-4830/EW)	23
8. SCHEMATIC CIRCUIT DIAGRAM	
(KPH-4800/EW,ES)	26
9. CONNECTION DIAGRAM	
(KPH-4800/EW,ES)	28
10. SCHEMATIC CIRCUIT DIAGRAM	
(KPH-4830/EW)	30
11. CONNECTION DIAGRAM	
(KPH-4830/EW)	32
12. SCHEMATIC CIRCUIT DIAGRAM	
(KPH-4800SDK/WG)	35
13. CONNECTION DIAGRAM	
(KPH-4800SDK/WG)	38
14. CABINET EXPLODED VIEW	41
15. CHASSIS EXPLODED VIEW	44
16. ELECTRICAL PARTS LIST	47
17. PACKING METHOD	53

Note: (KPH-4800SDK/WG)

When requested by a customer to confirm the receiving frequencies of the tuner, please determine whether FTZ standards are satisfied; If they are not, please adjust the unit to these standards, referring to the section of this service manual entitled ADJUSTMENT.

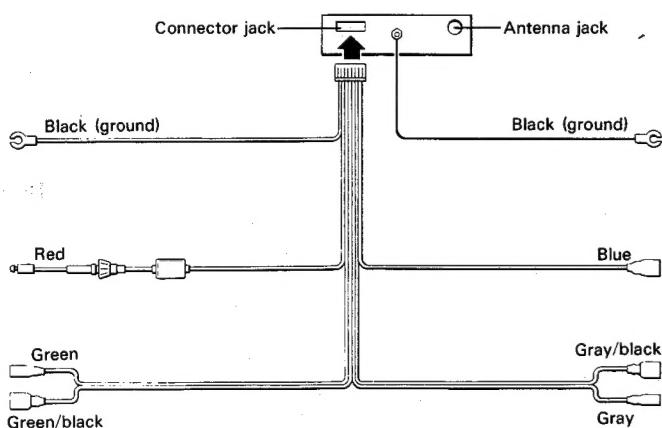
1. CONNECTIONS

Note:

- To avoid shorts in the electrical system, be sure to disconnect the battery \ominus cable before beginning installation.
- When replacing fuses, be sure to use only fuses of the same capacity.
- Be sure to properly connect the color coded leads. Failure to do so can cause malfunctions.
- Since a unique BPTL circuit is employed, never wire so the

speaker leads are directly grounded or the left and right speaker \ominus leads are common.

- Speakers connected to this unit must be high-power type possessing maximum output of at least 20W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.



Black (ground)	To vehicle (metal) body.
Red	To electric terminal controlled by ignition switch (12V DC) ON/OFF.
Green	To left speaker \oplus terminal.
Green/black	To left speaker \ominus terminal.
Blue	To auto-antenna power terminal (Max. 300mA 12V DC).
Gray/black	To right speaker \ominus terminal.
Gray	To right speaker \oplus terminal.

Fig. 1

2. OPERATION

• Using the Radio

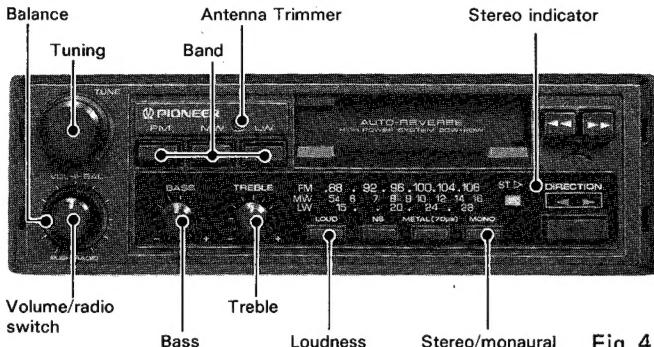


Fig. 4

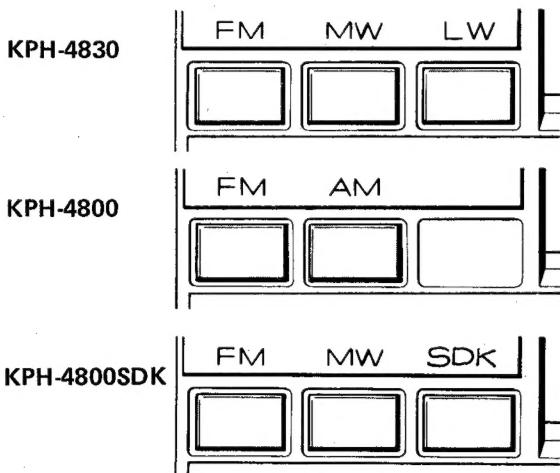


Fig. 5

• Using the Tape Deck

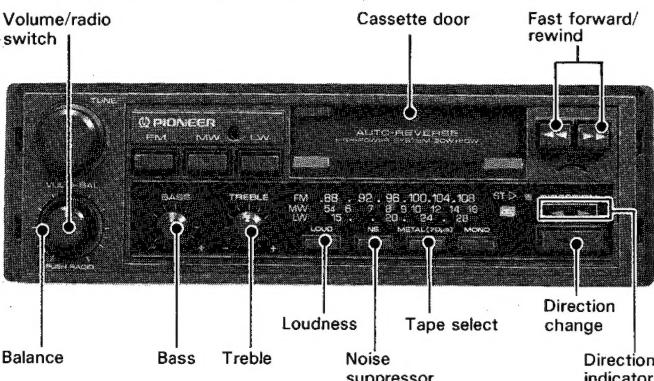


Fig. 6

• Before attempting operation.....

- Reduce the volume by turning the volume control knob to the left.
- 1. Insert a tape into the deck to turn the power on and automatically begin playback. Even if the radio is on, the unit will automatically switch to and begin tape playback.
- 2. Adjust the volume, bass, treble and balance. Press the loudness switch if required.
- 3. When tape playback reaches the end of the tape, playback will automatically switch from the side being played to the opposite side (ie. Side A to Side B or vice versa) (Auto-reverse). To eject the tape during playback, simultaneously press the fast forward and rewind buttons.

Note:

- Do not try to eject the cassette immediately after insertion, as it will cause malfunction. Wait a few seconds.

• Before attempting operation.....

- Reduce the volume by turning the volume control knob to the left.
- 1. Press the radio switch to turn on power.
- 2. Press the band switch to select band.
- 3. Turn the tuning knob to select a frequency.
- 4. Adjust the volume, bass, treble and balance. Press the loudness switch if required.

• Stereo/Monaural Switch

This switch is used to change from stereo to monaural for FM broadcasts, and is usually left in the stereo position. When a stereo broadcast is received, the stereo indicator will illuminate. With the "Automatic Reception Control" (ARC) function, stereo broadcasts can always be enjoyed in their optimal reception mode. If excessive noise is present, pressing this switch allows monaural reception of the broadcast.

• Loudness Switch

When playing back a tape or listening to the radio at low volume, the low and high tones are emphasized and more clearly heard by pressing this switch.

• Antenna Trimmer Adjustment

Tune in a frequency in the vicinity of 1,400kHz in the MW (AM) band and adjust the antenna trimmer with a Phillips head screwdriver until optimum reception is attained.

- If the ignition of the vehicle is turned OFF 2 to 3 seconds after the direction change button is pressed, the tape can not be ejected even if the ejection button is pressed. When this happens, turn the ignition key to the ON or ACC position to remove the tape.

• Fast Forward/Rewind

Since the transport can be in either direction, both the left and right high-speed tape transport buttons can be regarded as fast forward/rewind buttons.

For fast forward, press the high-speed tape transport button that corresponds to the direction that is shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the opposite side of the tape (Auto-reverse).

For rewind, press the button that is opposite that of the direction shown by the direction indicator. When the end of the tape is reached, playback will automatically begin from the beginning of the same side of the tape (Auto-replay).

Fast forward and rewind can be terminated by pressing the respective opposite high-speed tape transport button.

• Direction Change Button

This button is used to switch from one side of the tape to the other (from Side A to Side B or vice versa).

• Tape Select Switch

This switch is used to switch to the proper mode for the tape being used and should be depressed when using chrome or metal tapes.

• Noise Suppressor Switch

Press to reduce tape hiss.

3. PARTS LOCATION

NOTE:

- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.

The photoshows the model KPH-4800SDK/WG.

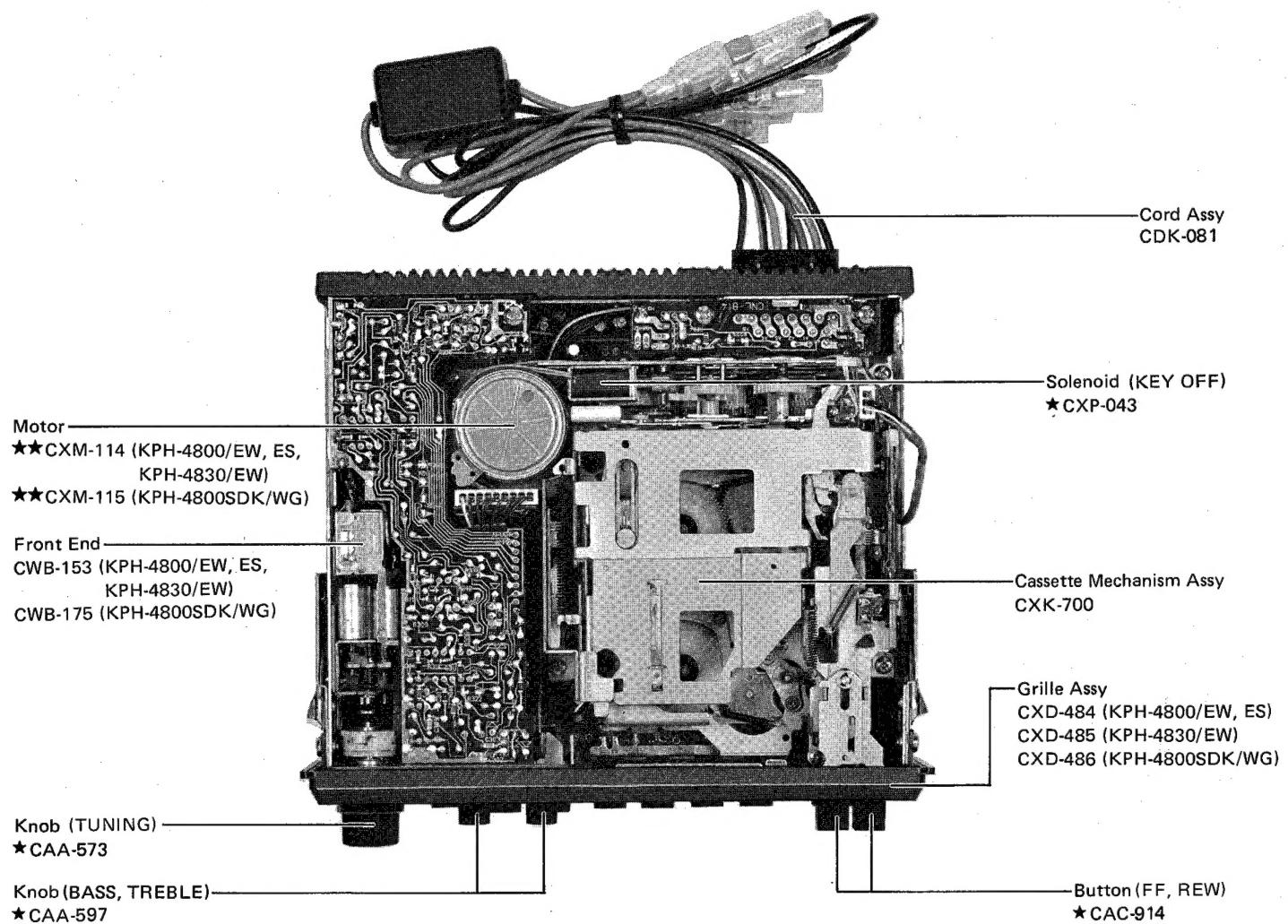


Fig. 7

4. DISASSEMBLY

- Removing the Case

1. Remove the five screws (A), and remove the case.

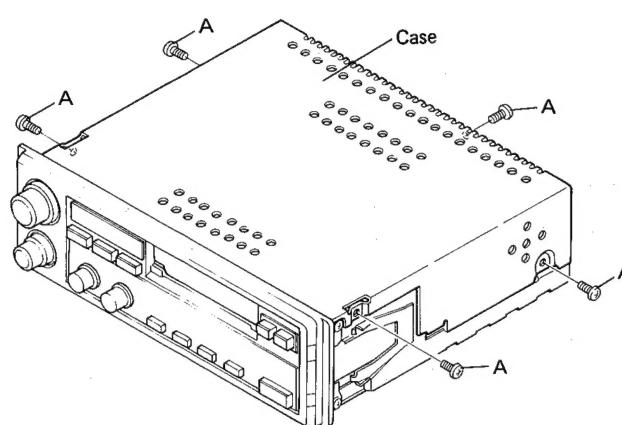


Fig. 8

- Removing the Grille Assy

1. Remove the four screws (B) and the knobs, then remove the grille Assy.

- Removing the SDK Unit (KPH-4800SDK/WG)

1. Remove the screw (C) and unsolder, then remove the SDK Unit.

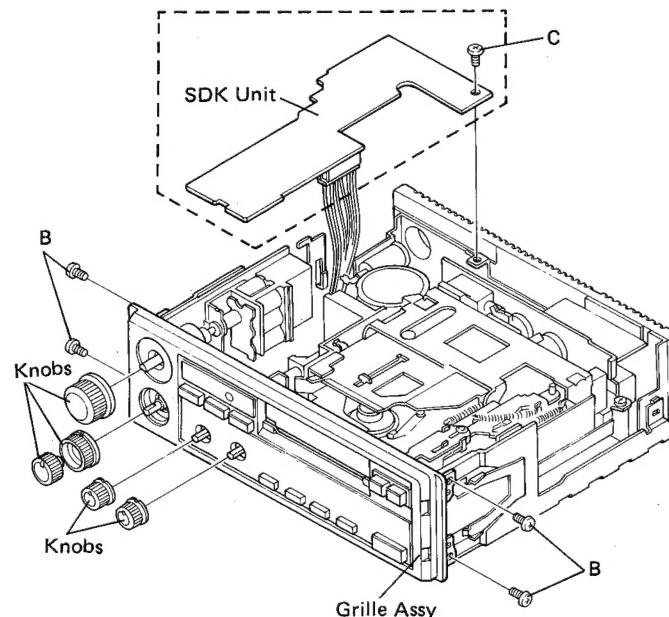


Fig. 9

- Removing the Cassette Mechanism Assy

1. Remove the four screws (D), and remove the cassette Mechanism Assy.

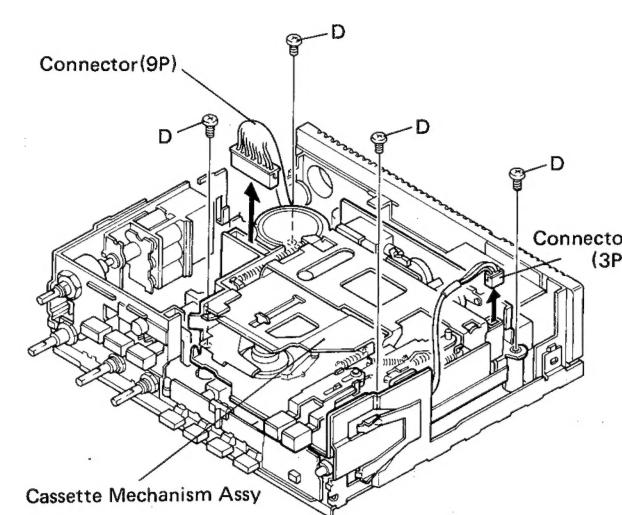


Fig. 10

- Removing the Chassis Unit

1. Remove the screw (E), then remove the chassis unit.

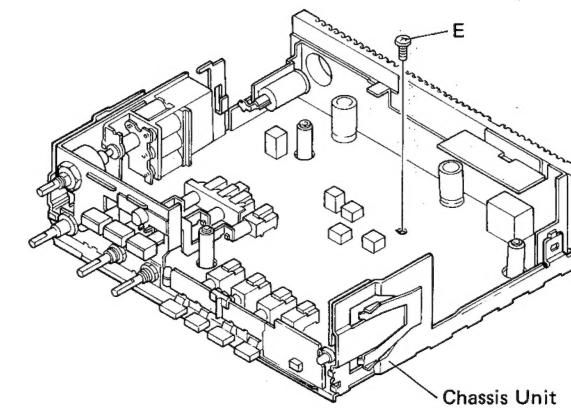


Fig. 11

5. CIRCUIT DESCRIPTION

5.1 POWER SUPPLY LINE

- KPH-4800/EW,ES, KPH-4830/EW

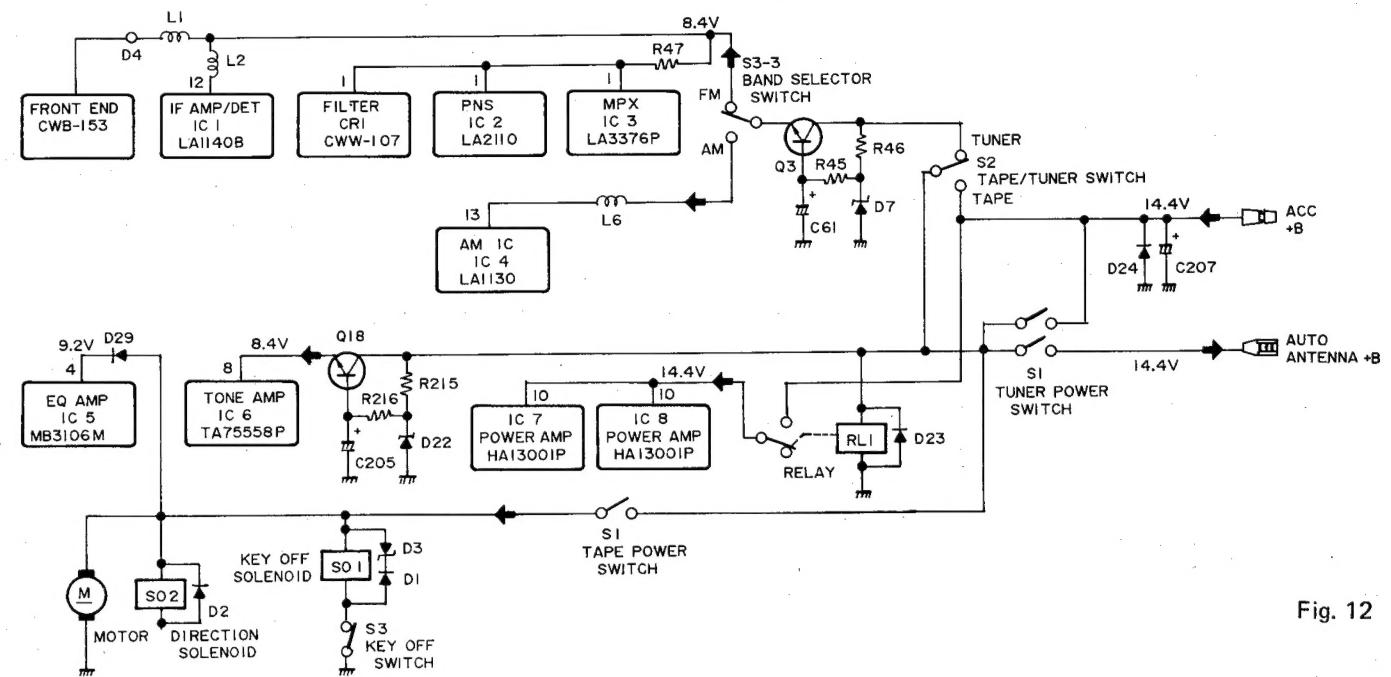


Fig. 12

- KPH-4800 SDK/WG

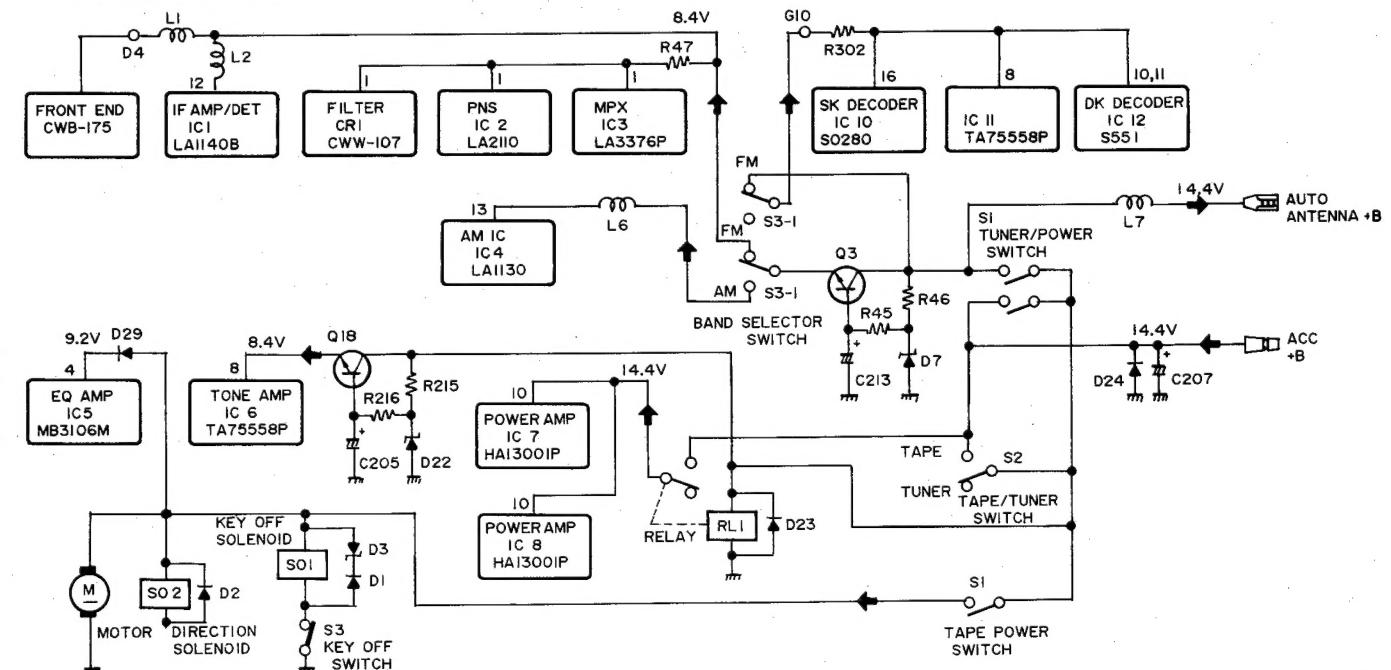


Fig. 13

5.2 BLOCK DIAGRAM

- KPH-4800/EW, ES

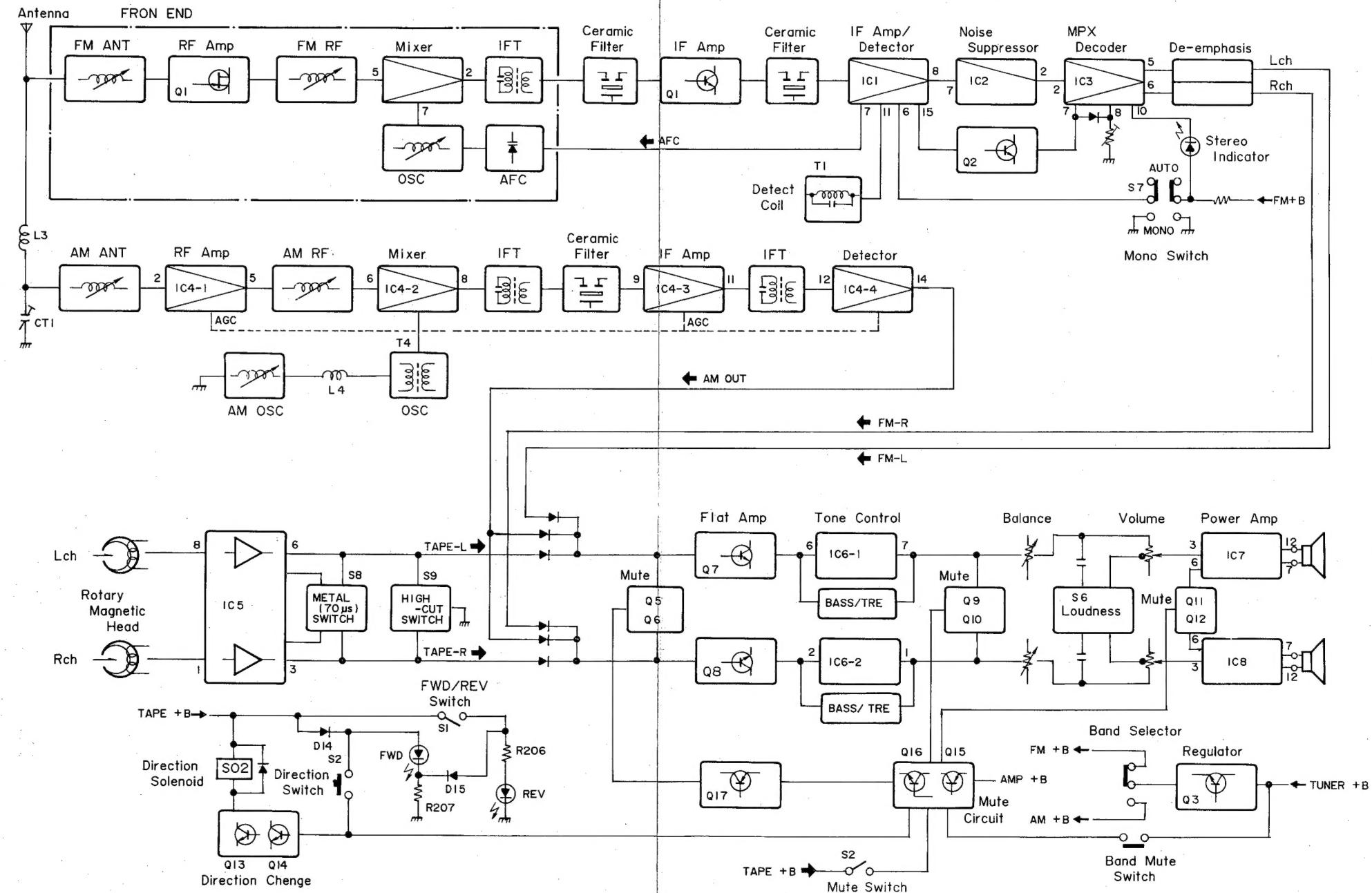


Fig. 14

● KPH-4830/EW

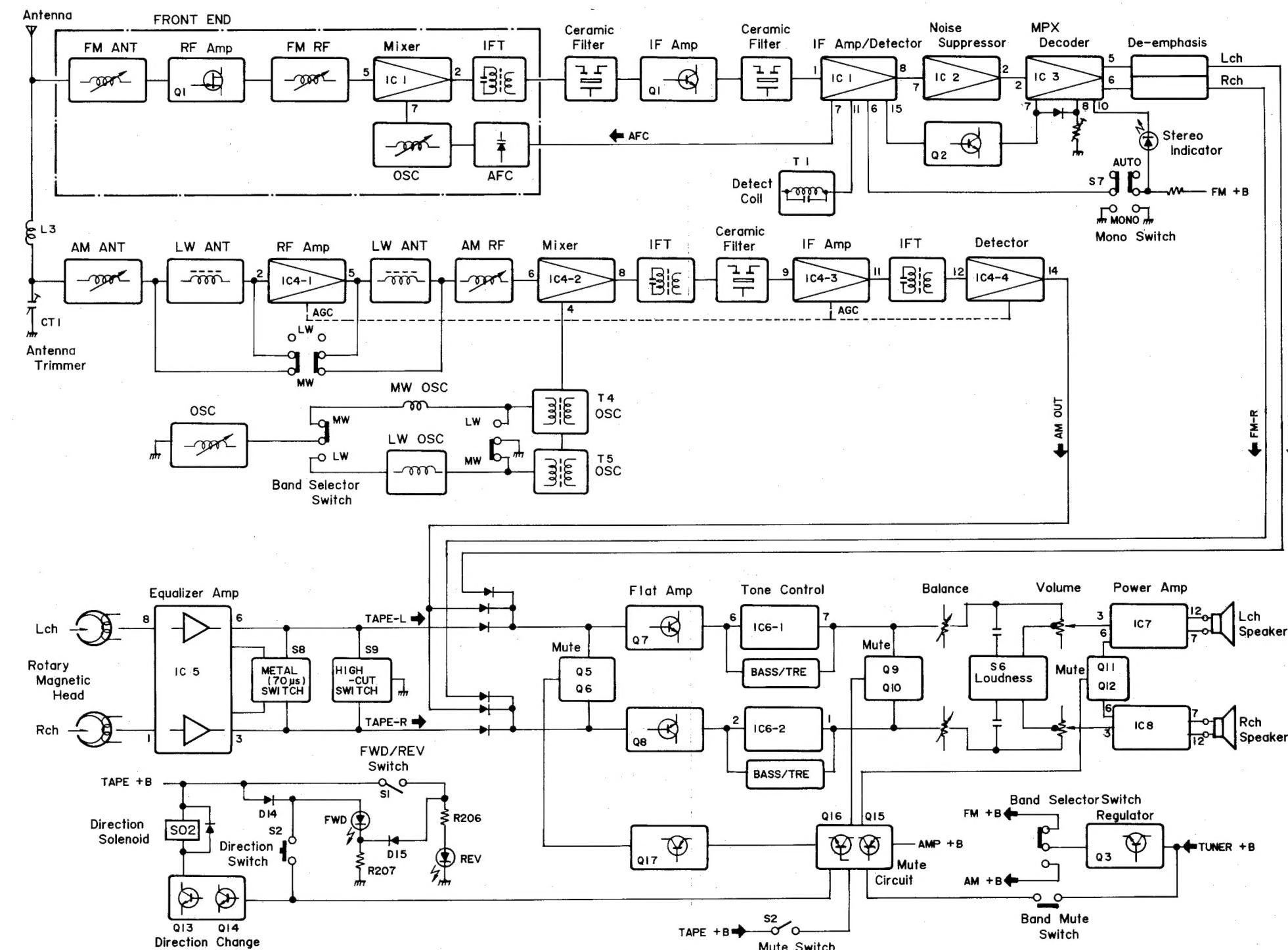


Fig. 15

• KPH-4800 SDK/WG

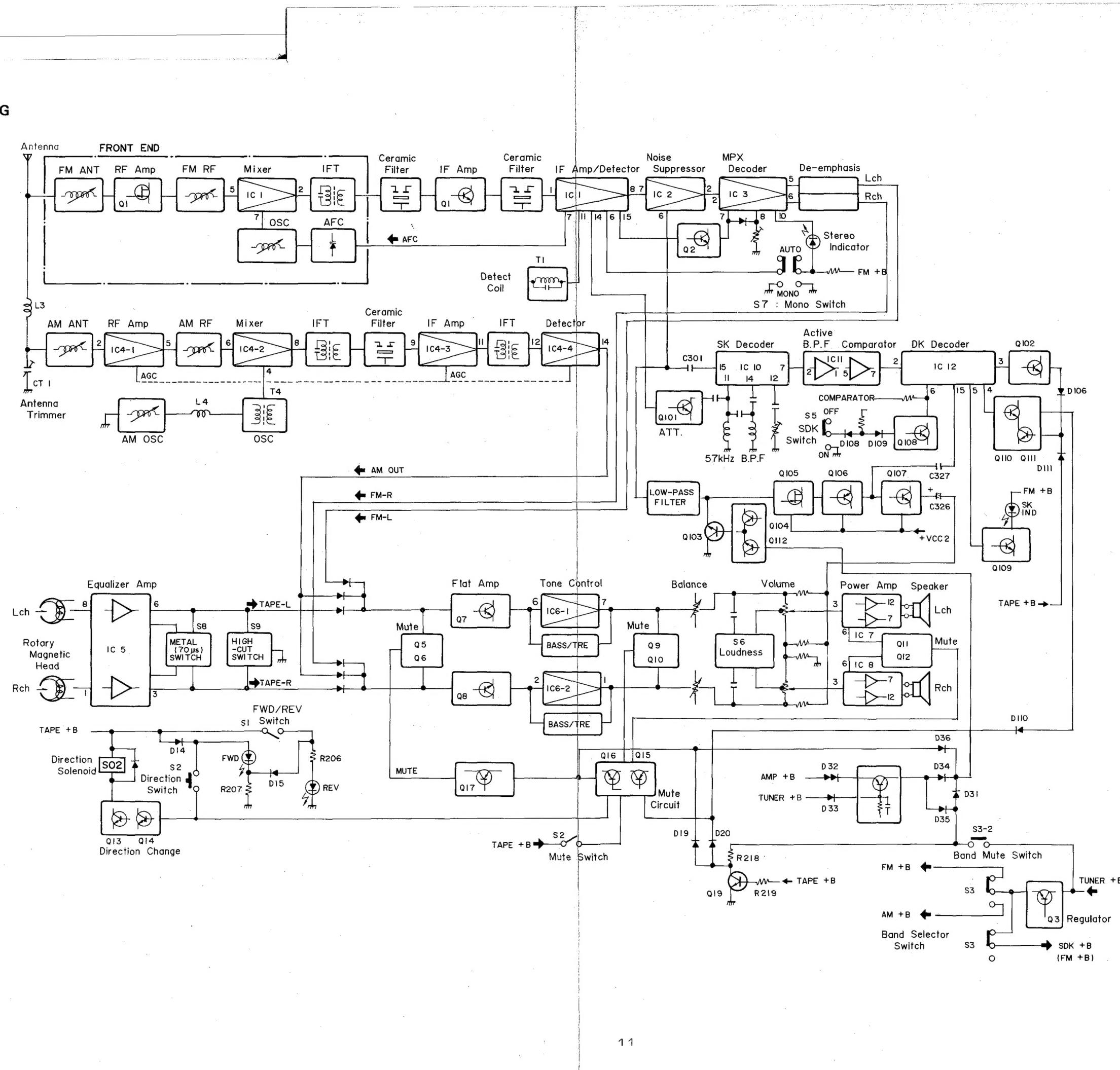


Fig. 16

5.3 FM TUNER SECTION

The intermediate frequency signal is converted to 10.7 MHz by the front end section, which contains an FET 1-stage RF amplifier*. After passing through a ceramic filter (CF1), the intermediate frequency signal passes through Q1 and CF2, and is subject to amplification, limiting amplification and detection by IC1. IC1, which contains a quadrature detector circuit, performs soft-muting, IF bandwidth muting, and outputting of signal strength. As the signal detected by IC1 passes through the PNS (pulse noise suppressor) of IC2, ignition noise is eliminated. The signal is then routed through the MPX decoder (IC3) and the de-emphasis circuits (R30, C34, R29 and C33) to the switching diodes (D3 and D4).

As the composite signal passes through IC3, DC voltage in proportion to the signal strength goes from IC1 pin 15, through the Q2 buffer to pin 7. Low frequency control in the high frequency range is carried out in proportion to the signal strength. Separation control is then carried out at pin 8, after the signal passes through the diode.

*Front ends CWB-153 and CWB-175 differ in receiving frequency range. The receiving frequency range is 87 MHz – 109 MHz for the former and 87.5 MHz – 107.5 MHz for the latter.

5.4 AM TUNER SECTION

The AM tuner section operates by permeability tuning at IC4. It features wide-band AGC and a wide dynamic range. The demodulated signal goes to switching diodes D5 and D6.

5.5 TAPE PLAYER SECTION

The tape player section of this unit is an auto-reverse tape player employing a rotating magnetic head. The signal from the head is routed to switching diodes D9 and D10 after passing through the equalizer at IC5.

• Direction Indicator Section (Fig. 17)

When the tape player is running in the reverse direction, D202 is illuminated because DC voltage is applied to D202 through the FWD/REV switch. At this time, D201 is "off" because reverse bias is being applied through D15. When the tape player is running in the forward direction, D202 is "off" because no DC voltage is being applied to that diode. The current which is flowing towards D202 is blocked by D15 because D201 is illuminated. D14 assures that D201 will go "off" by compensating the drop in voltage at D15.

• Direction Switching Circuit (Fig. 18)

When the direction Switch (S2) is pressed, the voltage applied to both ends of R204 is differentiated at C201 and R203. The rising edge of this differentiated voltage drives Q14 and Q13, which switches the solenoid "on," thereby changing the tape running direction.

In addition, a mute signal is emitted by S2 when the running direction is changed.

5.6 SIGNAL SWITCHING SECTION

The signal from the FM section passes through switching diodes D3 and D4; the signal from the AM section passes through switching diodes D5 and D6, and the signal from the tape player section passes through switching diodes D9 and D10. In models KPH-4800/EW, KPH-4800/ES and KPH-4830/EW the power source is switched between the FM, AM and tape player circuits. As voltage is applied to one of these circuits, it makes the corresponding diode conductive, and the signal from the operating circuit is routed through the buffer circuits at Q7 and Q8 to power amplifier IC7 and IC8. In model KPH-4800SDK/WG, the tuner circuit is active even when the unit is in the tape player mode. Therefore, when in the tape player mode, the voltage at the anode side of switching diodes D9 and D10 is set higher than the voltage (from the AM or FM section) at the anode side of switching diodes (D5, D6, D3 and D4). This applies reverse bias to the latter diodes, thus disconnecting the signal from the tuner section.

When in the tuner mode, voltage is not applied to IC5. The voltage at the anode side of switching diodes D9 and D10 is therefore 0V, and the signal from the tape player section is disconnected because voltage applied from the tuner applies reverse bias to these diodes. In the tuner, the signal from the AM or FM circuit (whichever is "on") is routed through Q7 and Q8 to the power amplifier.

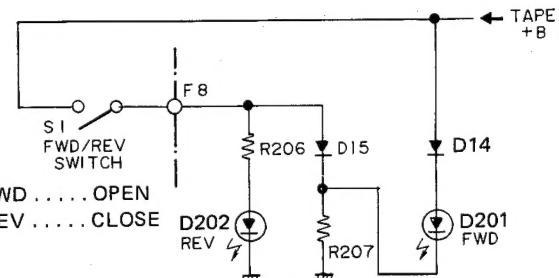


Fig. 17

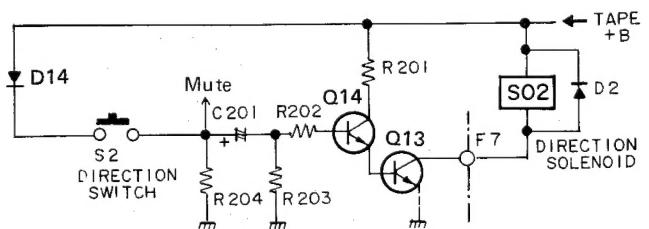


Fig. 18

5.7 MUTE CIRCUIT

The mute circuit consists of the mute signal generating circuit (Q15 and Q16) and the signal attenuator circuit (Q5, Q6 and Q9, Q10) (Model KPH-4800SDK/WG has, in addition, a mute signal generating circuit (Q20)).

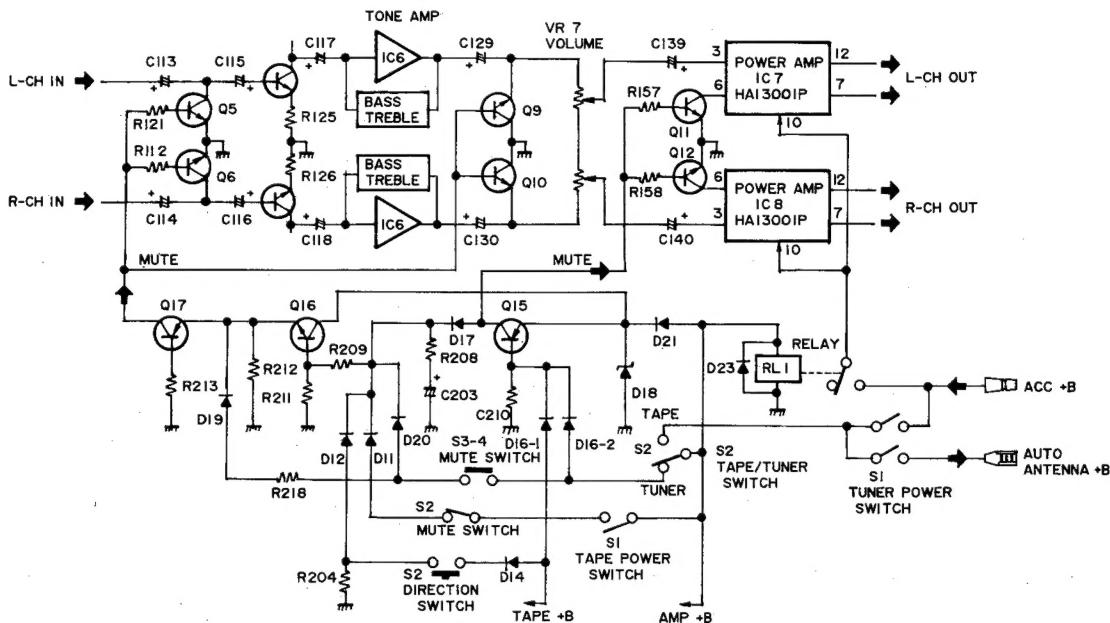


Fig. 19

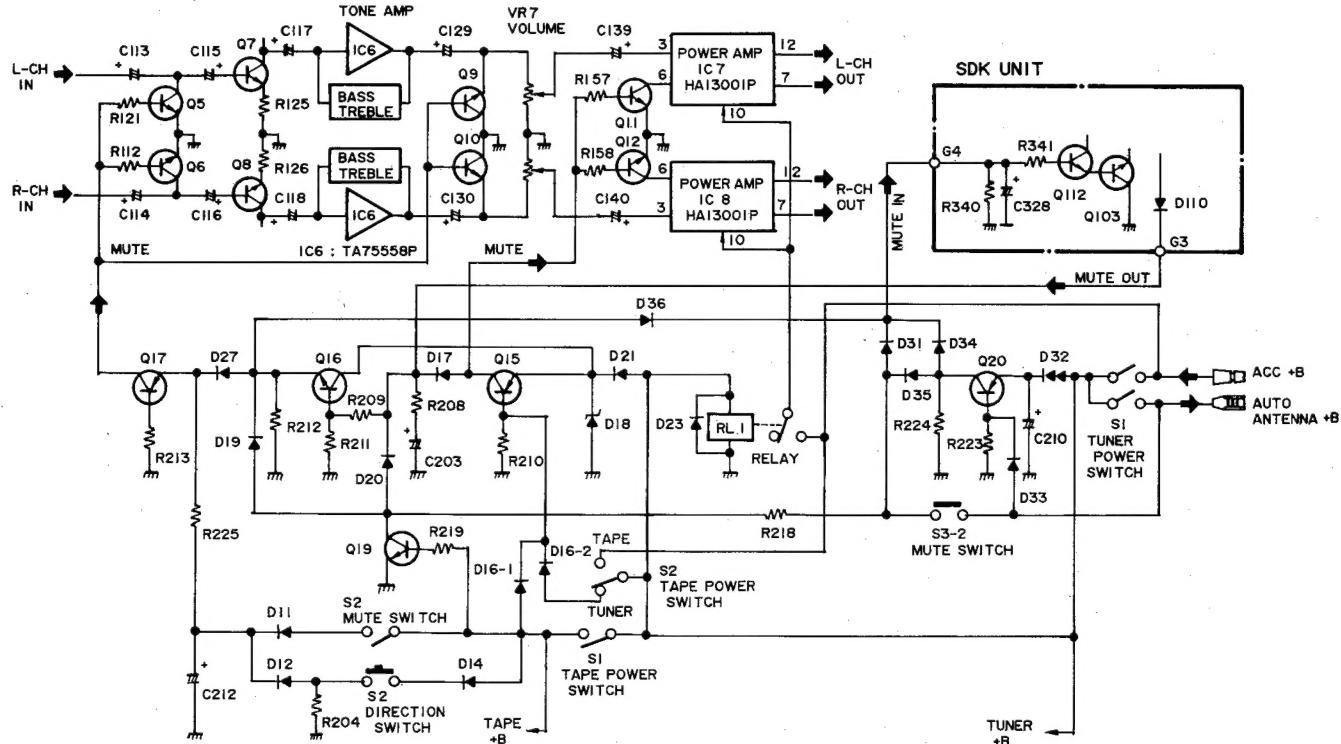


Fig. 20

○ Mute Signal Generating Circuit

The emitter of Q15 is connected to the + B line of the main amplifier through D21. At this time, C204 is charged. Q15 is normally not conducting, because the voltage reaching its base through D16-1 and D16-2 is equal to the voltage at the main amplifier + B. When a tape is ejected, however, Q15 goes "on," because the voltage at its base drops below the voltage at its emitter, and current flows to its collector.

Current then flows to the base of Q16 (emitter follower in the next stage), and muting voltage is generated at the emitter side of R212. This voltage passes through Q17, turning Q5, Q6 and Q9, Q10 "on," grounding the signal line and causing muting to take place. This suppresses the "popping" noise generated when power is switched off or when a tape is inserted or ejected. (In model KPH-4800SDK/WG, muting voltage is also applied to the base of Q112 through D36, causing muting in the DK interrupt signal line as well.)

○ When Changing Bands

Muting takes place to suppress the "popping" noise generated when changing bands. When changing bands, DC voltage flows from the "band-change muting" switch (S3) through R218 and D20 to the base of Q16 and to R212 through R218 and D19. This causes muting to take place. D19 compensates for the delay in voltage rise as C203 is charged. The muting period is also determined by C203. In model KPH-4800SDK/WG, "band-change muting" is also applied through D31 to the base of Q112 of the SDK unit, causing muting in the DK interrupt signal line (traffic information) as well. Because the tuner is operating when in the tape player mode, that power source voltage turns Q16

5.8 SDK UNIT SECTION (SDK Switch is "ON") (Refer to Circuit Diagram for (KPH-4800SDK/WG))

The composite signal, which is inputted at pin 7 of IC2, passes through an internal buffer amplifier, and is outputted at pin 6. It is then inputted at terminal G8 of the SDK unit. The inputted composite signals are separated into two signals. One signal passes through C323, then through the low-pass filter consisting of R324, C324, R325, and C325. After the pilot signal (38 kHz) and SK signal (57 kHz) are eliminated, the signal is amplified at Q105 and Q106, then outputted at terminal G1 after passing through the buffer amplifier at Q107. (This route is the interrupt signal line during DK operation.) A mute circuit consisting of Q103, Q112 and Q104 is connected at the Q105 gate. Muting voltage is applied to Q112 through terminal G4 when power is switched on or off, during band changing, and so forth, thereby eliminating the "popping" noise inputted from terminal G8. Q103, Q112 and Q104 go "off" when there is a DK signal, outputting an interrupt signal at terminal G1.

The other signal is inputted at pin 15 of IC 10 after passing through C301. Because the capacity of C301 is low, it passes the high range component (the SK signal) easily. R304, which is connected to pin 2 of the reference power

"on." Tape + B is applied to the base of Q19 through R219, preventing the AF signal line (tape player, tuner) "band-change muting" from operating.

○ During FF/REW; During "Direction-Change"

Muting takes place to suppress the "popping" noise generated due to mechanism operation during FF/REW and "direction-change." Voltage is applied through D11 to the base of Q15 from the "mechanism muting" switch (S2), and through D12 from the "direction" switch (S2). This causes muting to take place. (In model KPH-4800SDK/WG, muting voltage is applied during the above operations through R225 only to the AF signal line (tape player, tuner), in order that interrupt can occur even during FF/REW and "direction change.")

C212 determines the muting period. In addition, if operation of SDK is attempted when in the tape player mode with the tuner power switch (S1) in the "on" position, the "A" contact of S1 closes before the "B" contact of that switch, charging C210 through D32. Before contact "B" closes, the base of Q20 is turned "on" through R223, muting voltage is generated at both ends of R224, Q112 is turned "on" through D34 and muting occurs in the DK interrupt signal line. Muting also occurs in the AF signal line (tape player, tuner) as Q5, Q6, and Q9, Q10 are turned "on" through D35, R218 and D20 and through D19 and D27. When contact "B" closes, voltage is applied to the base of Q20 through D33. This causes Q20 to stop conducting, thereby suppressing the generation of a mute signal. During SDK operation, the SK mute signal is applied directly to the bases of Q5, Q6 and Q9, Q10 from the SKD unit, causing muting of the AF signal line (tape player, tuner).

source, is the bias resistor for the impedance conversion amplifier inside the IC. The signal which is inputted at pin 15 passes through the impedance conversion amplifier inside the IC. Pre-emphasis is then applied due to the constant at pin 13, and the signal is outputted at pin 14.

A double-tuned circuit tuned to 57 kHz (the SK signal) is connected at pin 14, eliminating signals other than the SK signal. The signal outputted from this double-tuned circuit is inputted at pin 11, and is further amplified by an internal amplifier. When the output voltage at pin 14 exceeds the Q101 base-emitter voltage created by D101 and D102, Q101 goes "on." This causes the output of the double-tuned circuit to adjust the level of the signal inputted at pin 11. This prevents malfunction of the double-tuned circuit when that circuit is detuned.

At this time, gain may be adjusted (thereby adjusting SK sensitivity) by adjusting VR101, which is connected at pin 12.

In this way, the amplified SK signal is detected by an internal detector. Pin 9 outputs the existence of an SK signal. When an SK signal is detected, it goes "high." The DK signal amplitude-modulated by the SK signal is detected

and outputted at pin 7.

A 456 kHz ceramic oscillator is attached at pin 5. It is used both internally, and to output 57 kHz (1/8 of the above frequency) at pin 6, which is then inputted by IC12 (latter stage). The 125 kHz DK signal, which is outputted at pin 7 of IC10, passes through a band pass filter at IC11 (1/2). It is then inputted at the comparator at the latter stage IC11 (2/2) and shaped into a waveform. IC12 detects the existence of a DK signal. When the waveform shaped DK signal is inputted from IC11 at pin 2, pin 3 goes "high" and pin 4 goes "low." Pin 5, the connection to the SK indicator, goes "high" when an SK signal is detected, causing Q109 to go "on" and illuminating the indicator. Pin 6 is the ON/OFF pin for IC12. IC12 is activated when the base bias of Q108 is grounded through D108, causing the voltage at its collector to go "high." A 1.7 kHz alarm signal, which increases in volume in three stages, sounds 30 seconds after the SK signal ceases at pin 15. This output is applied to the base of Q107 through R318 and C327 and outputted at terminal G1.

When the voltage at pin 4 of IC12 is "high" (when neither SK nor DK signal is being detected), Q103 and Q104 are

"on," and muting occurs in the interrupt signal line.

Muting occurs in the AF signal line (tape player, tuner) when voltage is outputted at terminal G3. This pin is connected serially to Q110 and Q111. During operation of the tape player, terminal G5 is "high," and Q111 is "on" (controlled by base of Q110). If a DK signal is detected, pin 4 of IC12 goes "low," Q110 goes "off," and the output at terminal G3 goes "high." This causes sound from the tape player to be muted, and the interrupt signal line causes traffic information to be outputted.

If a DK signal is detected during operation of the tuner, pin 3 of IC12 goes "high" and Q102 causes Q111 to go "on." At this time, pin 4 goes "low," muting voltage is outputted at terminal G3, and muting occurs in the AF signal line (tape player, tuner). In the DK interrupt signal line, Q104 and Q103 go "off," and traffic information is outputted. When neither an SK signal nor a DK signal is being detected, pin 3 is "low," pin 4 is "high," Q110 is "on," and Q111 is "off." When muting voltage is outputted at terminal G3, muting also occurs in the DK interrupt signal line.

• SDK Interrupt Circuit

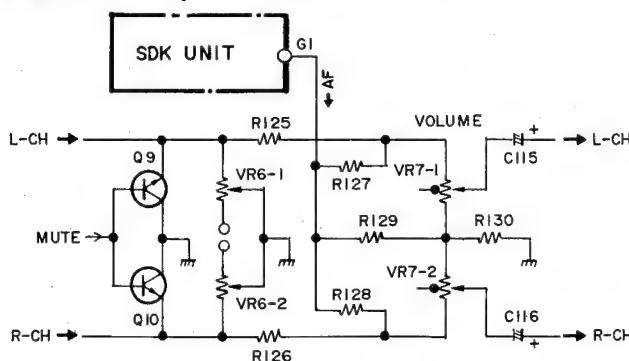


Fig. 21

During DK interrupt, the traffic information which is outputted from terminal G1 of the SDK unit is applied through R127 and R128 to the left and right channels of the early stage VR7 (because Q9 and Q10 are "on," the level is divided between R125 and R126). This output can be adjusted at VR7 (VOLUME). The output divided between R129 and R130 is inputted on the ground side of VR7, so that output occurs even when volume is adjusted to "minimum."

• Operation of Individual Sections when in the SDK Mode (SDK Switch "ON")

Pin Name	Condition			Standard			
	Input Signal	AGC	Tape + B	SK-IND.	Interrupt Output	Alarm Out	Mute Out
Situation	*1 G8	G9	G5	G6	G1		G3
1	DK + AF	L	H	ON	○	X	H
2	DK + AF	L	L	ON	○	X	H
3	DK + AF	H	L	OFF	X	X	H
4	DK + AF	H	H	OFF	X	X	L
5	SK + AF	L	L	ON	X	X	L
6	AF	L	L	OFF	X	*1 ○	H
7	AF	L	H	OFF	X	*1 ○	L

*1 AF: 400 Hz, -10 dB

SK: 57 kHz ±10 Hz, 5 mV

DK: SK signal, 30% amplitude modulated at 125 Hz

*2 Alarm output occurs 30 seconds after changing from situations 1 – 5 to situation 6 or situation 7. Output increases in intensity in three steps.

5.9 LEVEL DIAGRAM

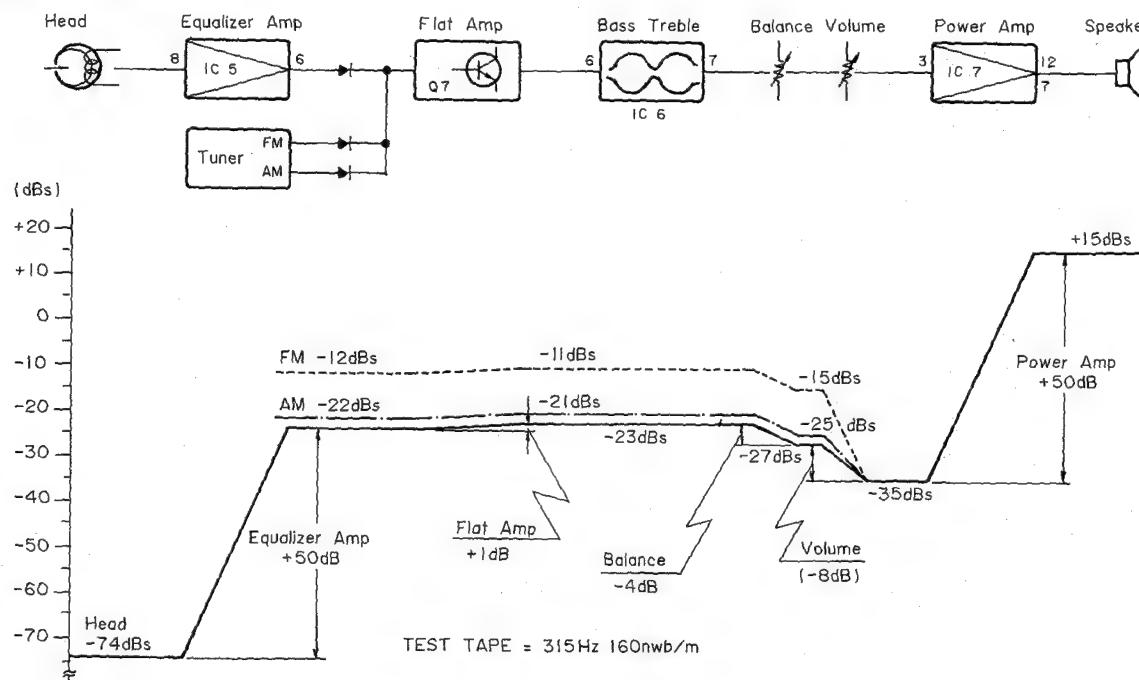


Fig. 22

6. DIAL STRINGING

1. To start dial stringing, remove the cassette mechanism unit at first.
2. Turn the tuning shaft fully to the right.
3. When dial stringing, follow the numerical sequence and operate securely as there is no looseness on the way.

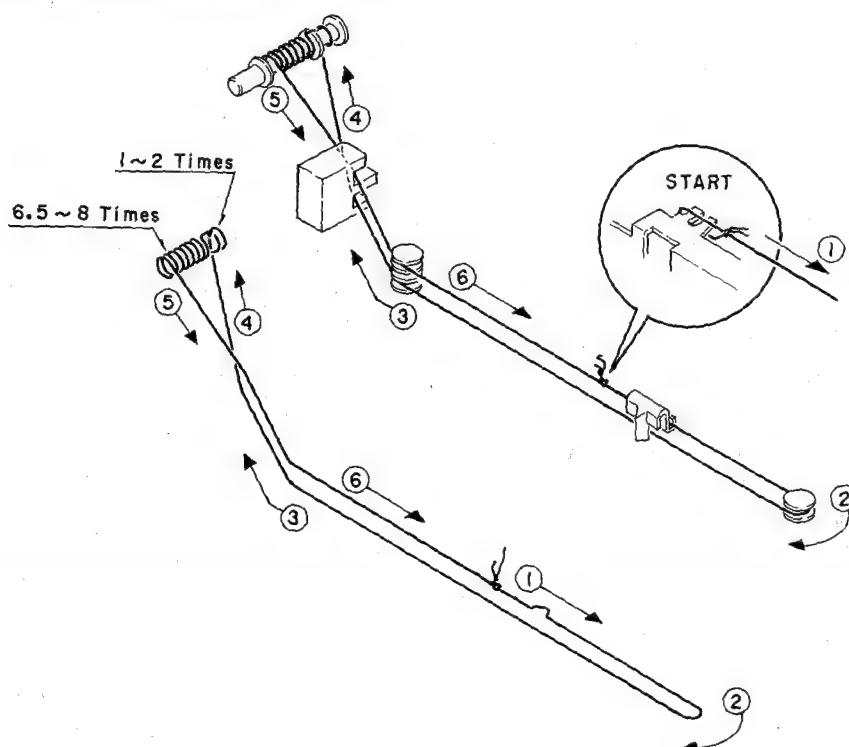


Fig. 23

7. ADJUSTMENT

Noise Generator

A noise generator is used when adjusting the FM IF. The noise generator circuit and pattern diagrams below are for reference.

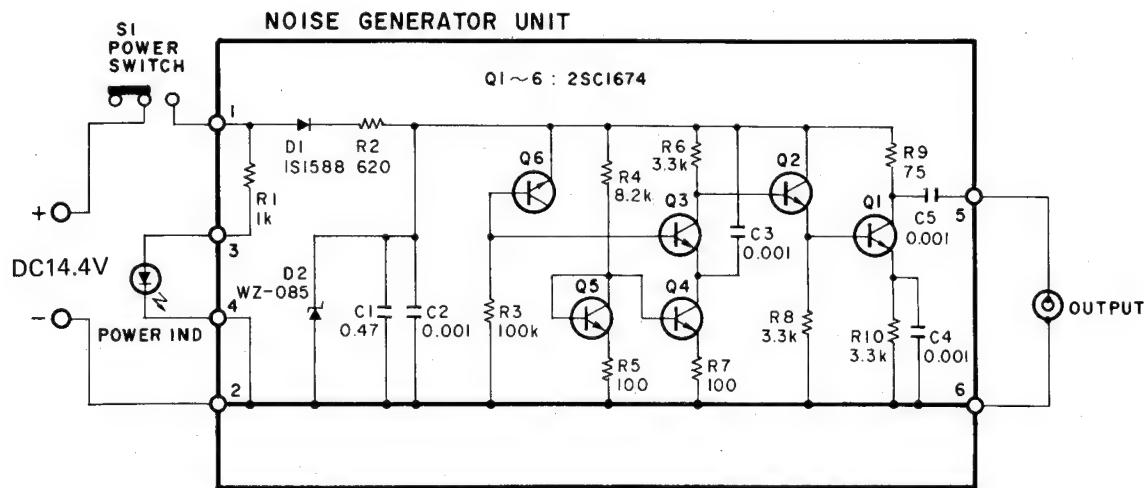


Fig. 24

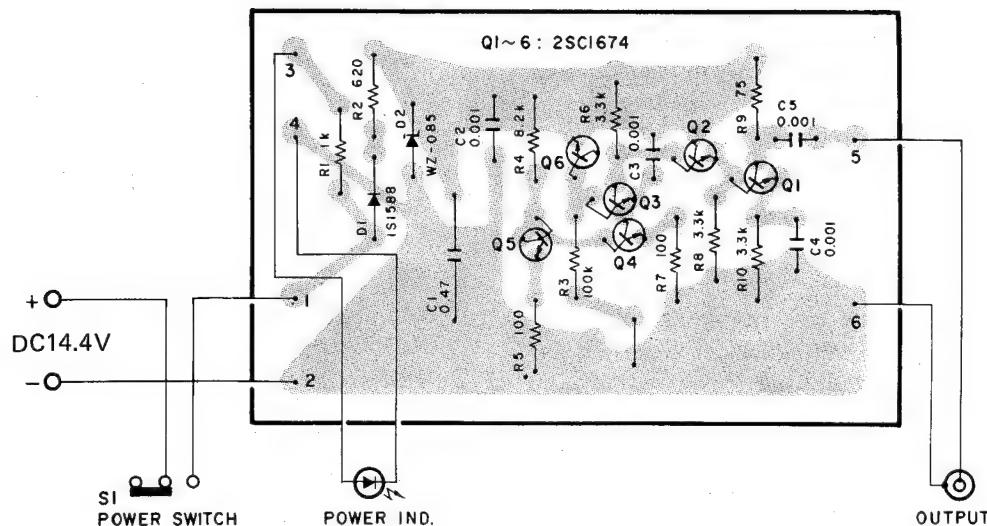


Fig. 25

7.1 FM IF ADJUSTMENT

● Connection Diagram

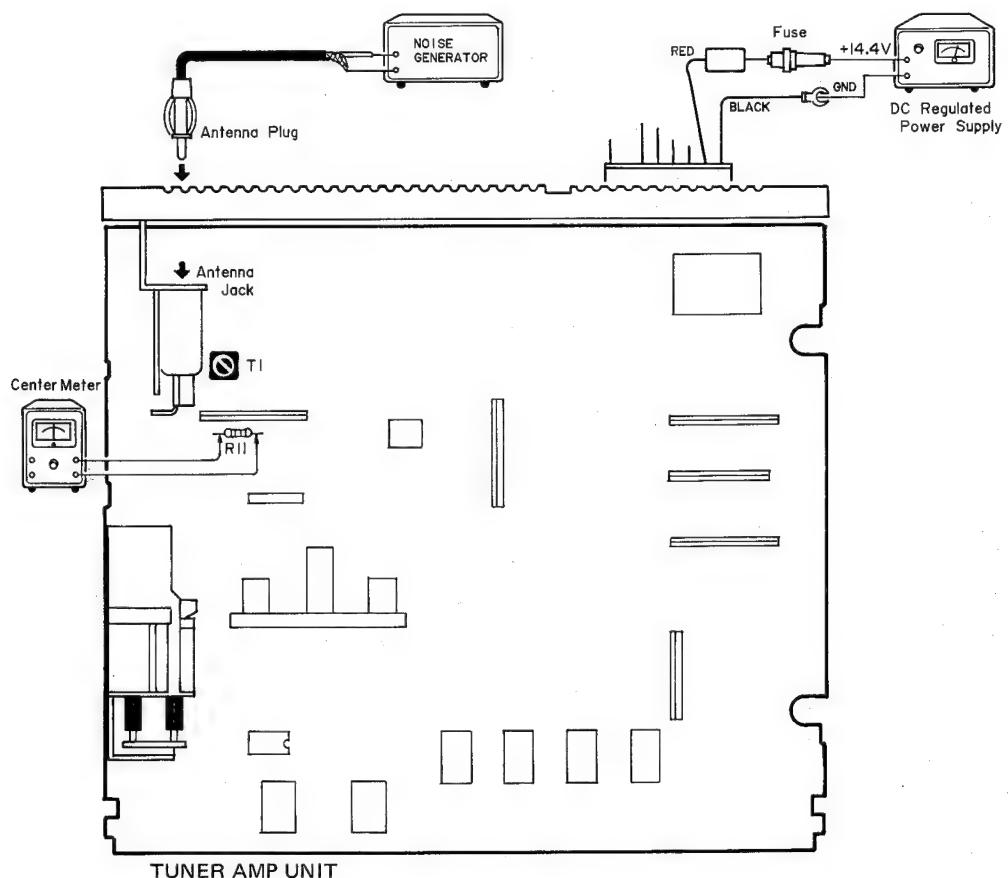


Fig. 26

● To Adjust

1. Add input signal from noise generator and adjust T1 so that the pointer of center meter will come to the center.

7.2 FM TRACKING ADJUSTMENT

- Connection Diagram

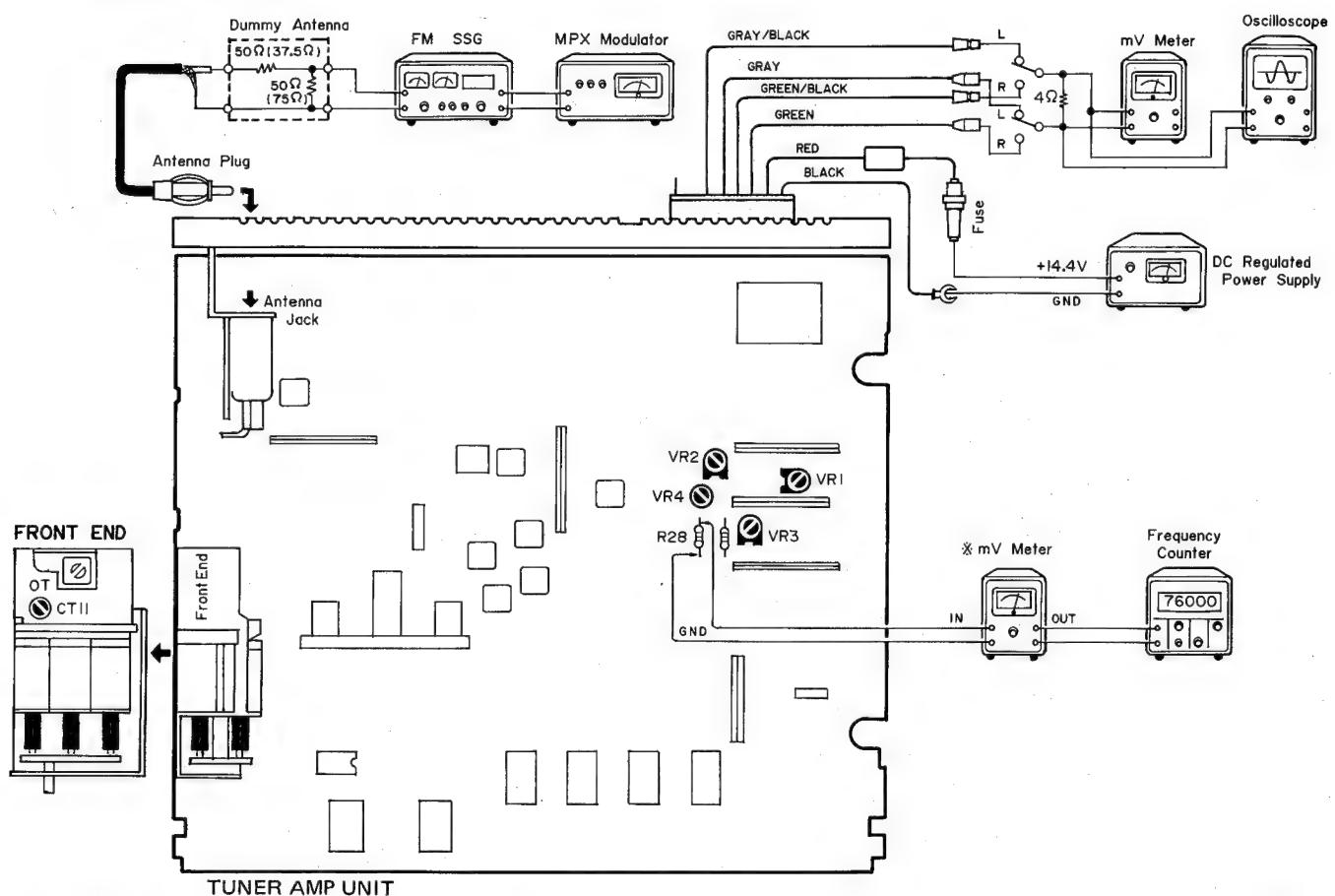


Fig. 27

* mV Meter

Input Impedance More than 1MΩ

Input Capacity Less than 100pF

- To Adjust (KPH-4800/EW, ES, KPH-4830/EW)

SSG Frequency	Pointer Position	Adjustment Point	Note
1. 87.0MHz (400Hz, 100% modulation), output level 10 dB (μ V)	Minimum	CT11 (FRONT END)	87.0MHz can be received.
2. 108.5MHz (400Hz, 100% modulation), output level 10 dB (μ V)	Maximum		Check if 108.5MHz can be received.

- To Adjust (KPH-4800SDK/WG)

SSG Frequency	Pointer Position	Adjustment Point	Note
1. 87.5MHz (400Hz, 100% modulation), output level 10 dB (μ V)	Minimum	CT11 (FRONT END)	87.2MHz can not be received.
2. 107.5MHz (400Hz, 100% modulation), output level 10 dB (μ V)	Maximum		Check if 108.3MHz can not be received.

7.3 FM MPX ADJUSTMENT

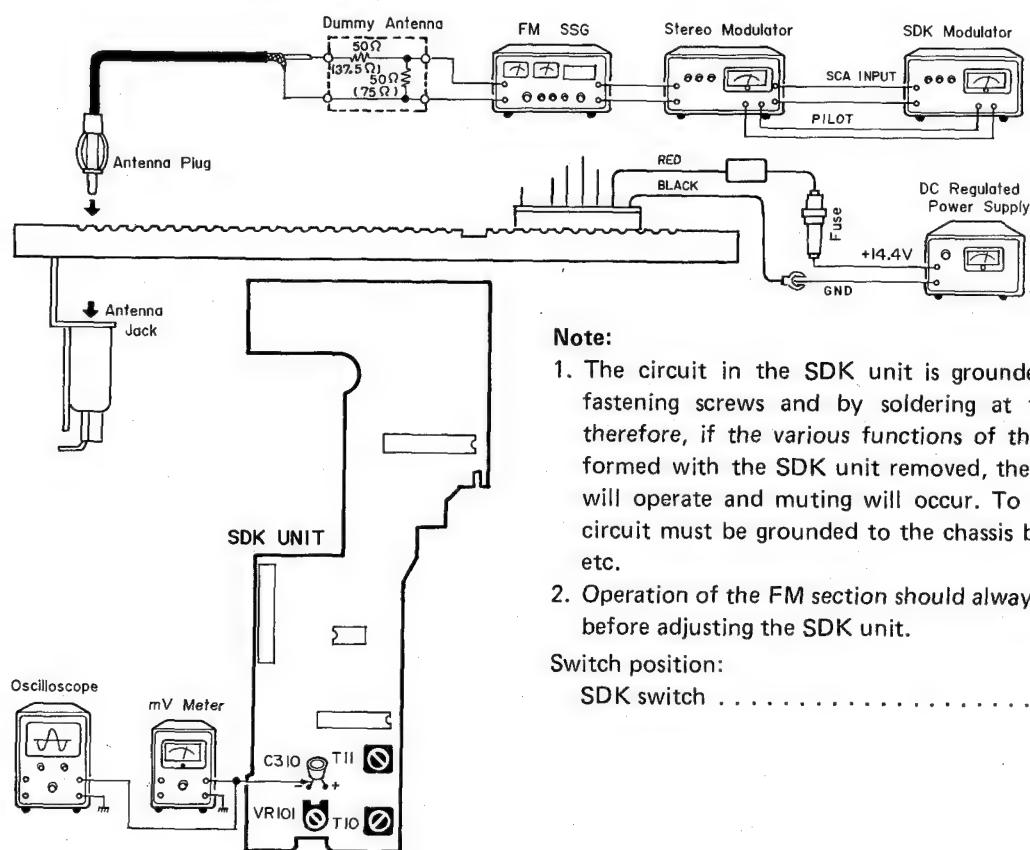
- Connection Diagram (Shown in Fig. 27)

- To Adjust

1. Adjust VR4 to make the frequency counter show 76kHz $\pm 120\text{Hz}$ by applying an unmodulated signal of 98MHz and 60dB (μV) from the FM SSG.
2. Adjust VR2 to reduce the oscilloscope wave to the minimum using only the modulation for the pilot signal (10%) and 60dB (μV).
3. Adjust VR1 to obtain best separation by applying a stereo signal (1kHz, 100% modulation).
4. Adjust VR3 to obtain a 5dB separation by making the input signal 35dB (μV).

7.4 SDK DECODER ADJUSTMENT (KPH-4800SDK/WG)

- Connection Diagram



Note:

1. The circuit in the SDK unit is grounded through the fastening screws and by soldering at the front end. therefore, if the various functions of the unit are performed with the SDK unit removed, the muting circuit will operate and muting will occur. To avoid this, the circuit must be grounded to the chassis by using a wire, etc.
2. Operation of the FM section should always be confirmed before adjusting the SDK unit.

Switch position:

SDK switch ON

Fig. 28

- To Adjust

1. Set the FM SSG as follows

Carrier	98MHz
Modulation (audio)	400Hz, 60% (Deviation 45kHz)
Modulation (SK)	57kHz, 5% (Deviation 3.75kHz)
Antenna Input Level	60dB (μV)
2. Maximize resistance by turning VR101 clockwise.

3. Adjust T10 and T11 so that the mV meter reading is maximized.
4. Next, adjust the FM SSG attenuator so that antenna input is 15dB (μV). Adjust VR101 so that the SK indicator is illuminated.

7.5 AM (MW/LW) IF ADJUSTMENT

- Connection Diagram

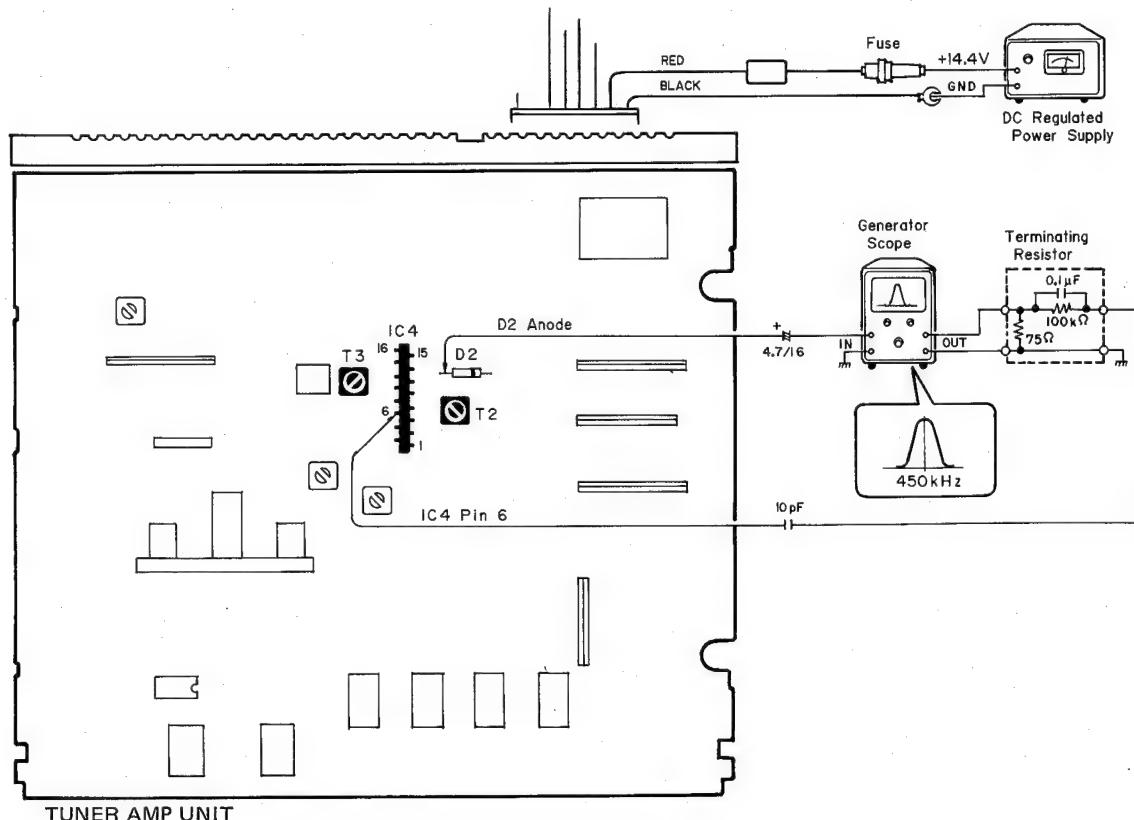


Fig. 29

- To Adjust

1. Set Generator Scope as follows:

Frequency centering on sweep 450kHz
 Input level 0.3Vp-p/cm
 Output level 3mV~10mV

2. Turn the cores of T2, T3 and adjust so that U-curve will be at maximum amplitude and best symmetry.

7.7 AM (MW) TRACKING ADJUSTMENT

- Connection Diagram

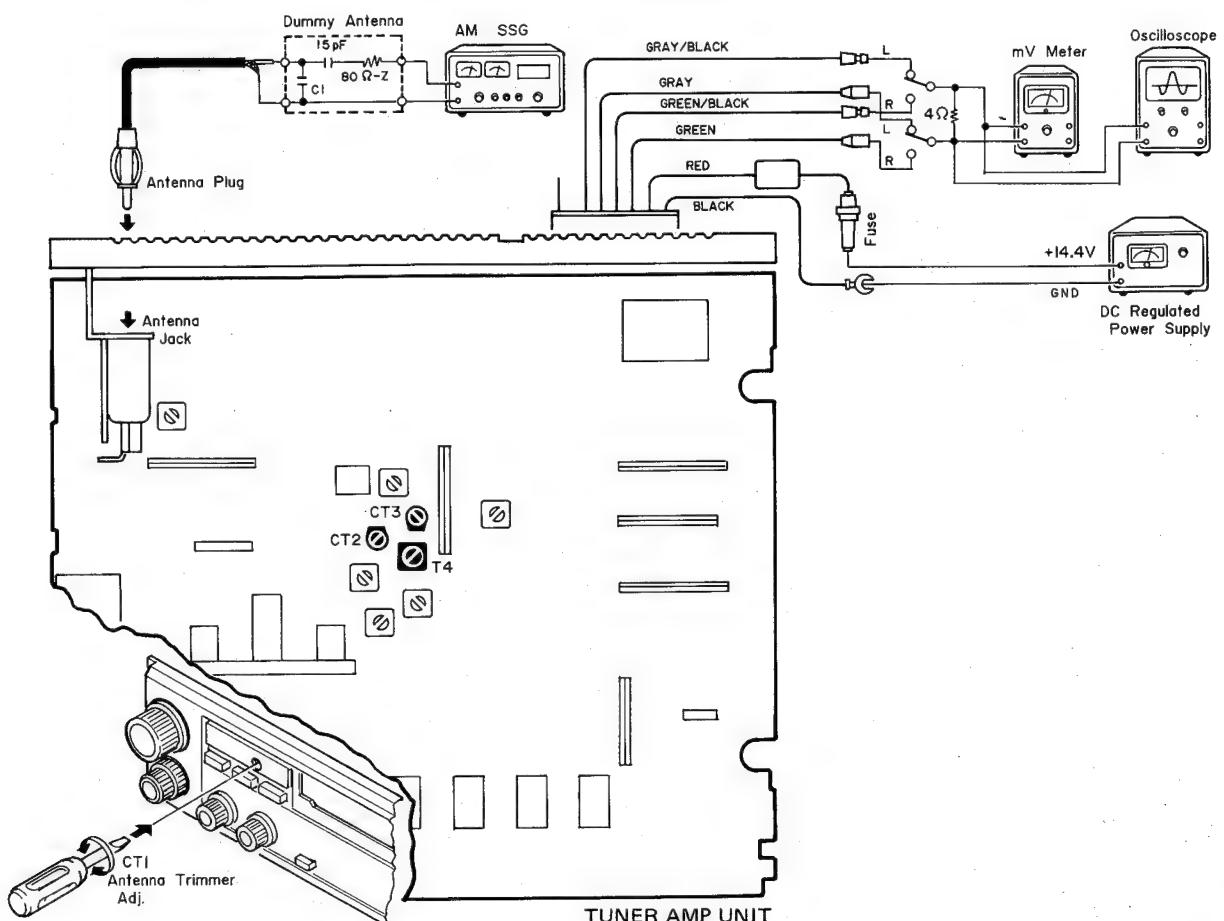


Fig. 30

NOTICE:

Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.

Z: Output impedance of the SSG.

- To Adjust

SSG Frequency	Pointer Position	Adjustment Point	Note
1. 515kHz (400Hz, 30% modulation), output level 20 dB (μ V)	Minimum	T4	515kHz can be received
2. 1,650kHz (400Hz, 30% modulation), output level 20 dB (μ V)	Maximum	CT2	1,650kHz can be received
3 Repeat (1) and (2) alternately and adjust so that broadcast can be received at the frequency between 515kHz and 1,650kHz.			
4. 1,400kHz (400Hz, 30% modulation), output level 20 dB (μ V)	Tune to 1,400kHz	CT1, CT3	mV Meter at maximum

7.7 LW TRACKING ADJUSTMENT (KPH-4830/EW)

- Connection Diagram

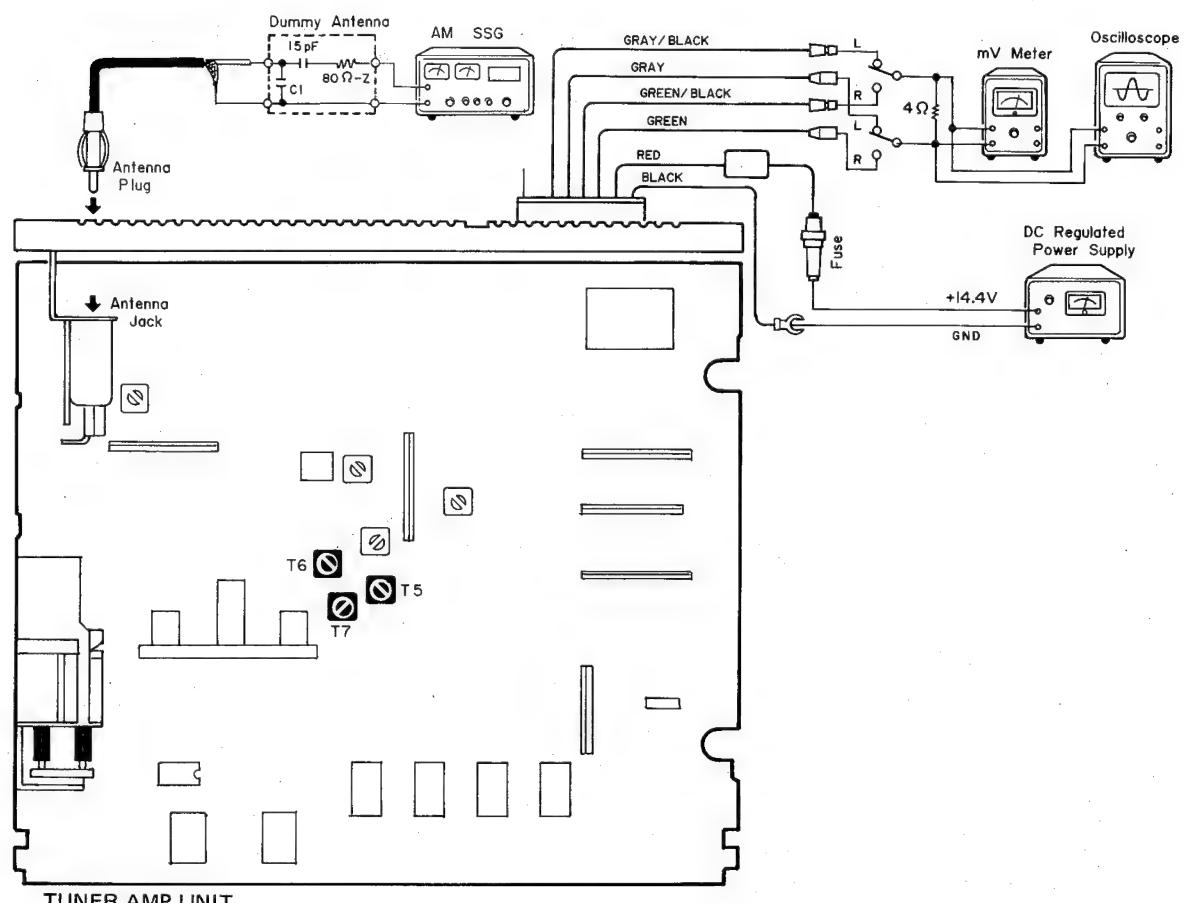


Fig. 31

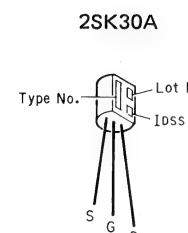
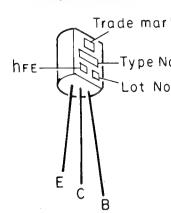
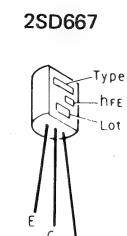
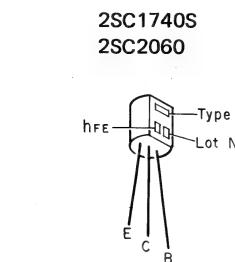
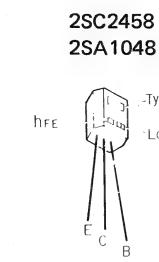
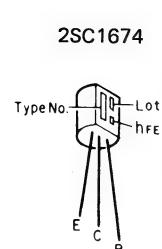
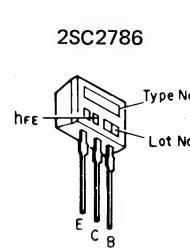
NOTICE:

Select C1 so that total capacity of 80pF is attained from the direction of the received jack.
Z: Output impedance of the SSG.

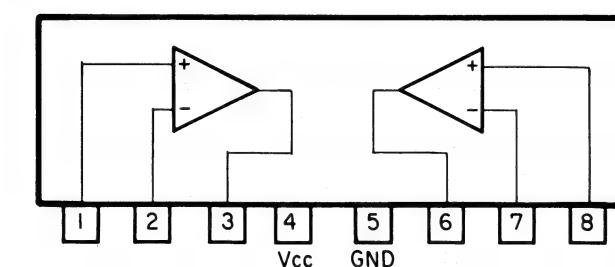
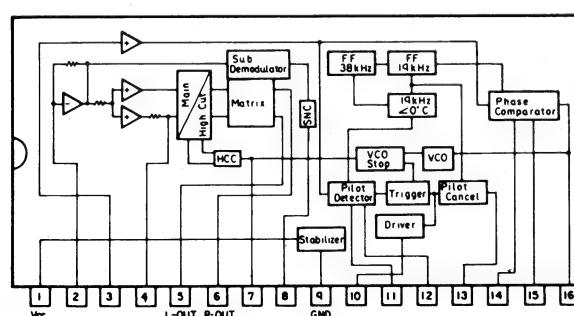
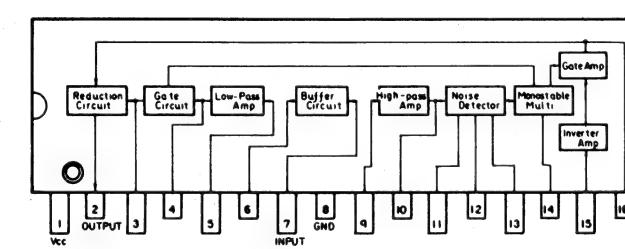
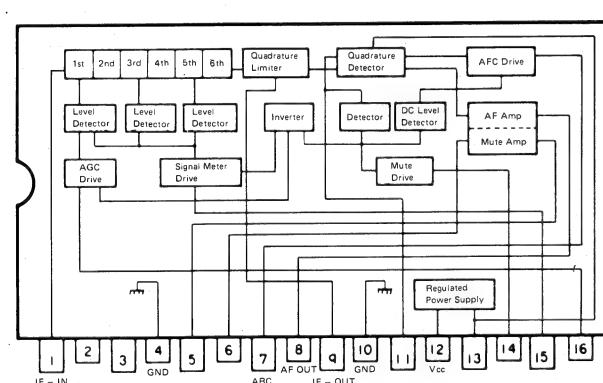
- To Adjust

SSF Frequency	Pointer Position	Adjustment Point	Note
1. 140kHz (400Hz, 30% modulation), output level 40 dB (μ V)	Minimum	T5	140kHz can be received
2. 290kHz (400Hz, 30% modulation), output level 40 dB (μ V)	Maximum	T7	290kHz can be received
3. Repeat (1) and (2) alternately and adjust so that broadcast can be received at the frequency between 140kHz and 290kHz.			
4. 215kHz (400Hz, 30% modulation), output level 40 dB (μ V)	Tune to 215kHz	T6	mV Meter at maximum

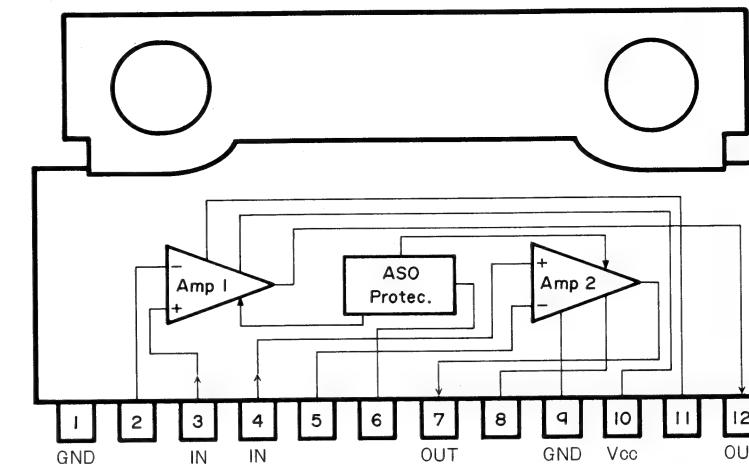
- ICs and Transistors



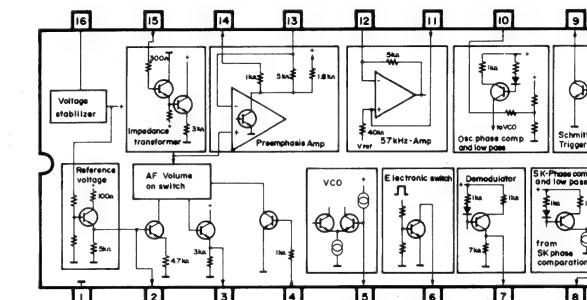
Part No.	Indication (Type No., hFE)
2SC2712-LG	LG
2SC2712-LL	LL
2SC2712 LY	LY
2SB709-AQ	AQ
2SB709-AR	AR
2SB709-AS	AS
2SD601-YQ	YQ
2SD601-YR	YR
2SD601-YS	YS



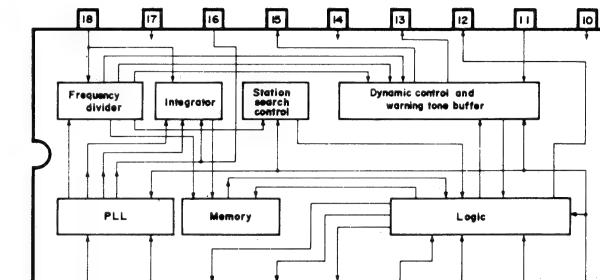
HA13001F



S0280



S551



8. SCHEMATIC CIRCUIT DIAGRAM (KPH-4800/EW,ES)

3

4

5

6

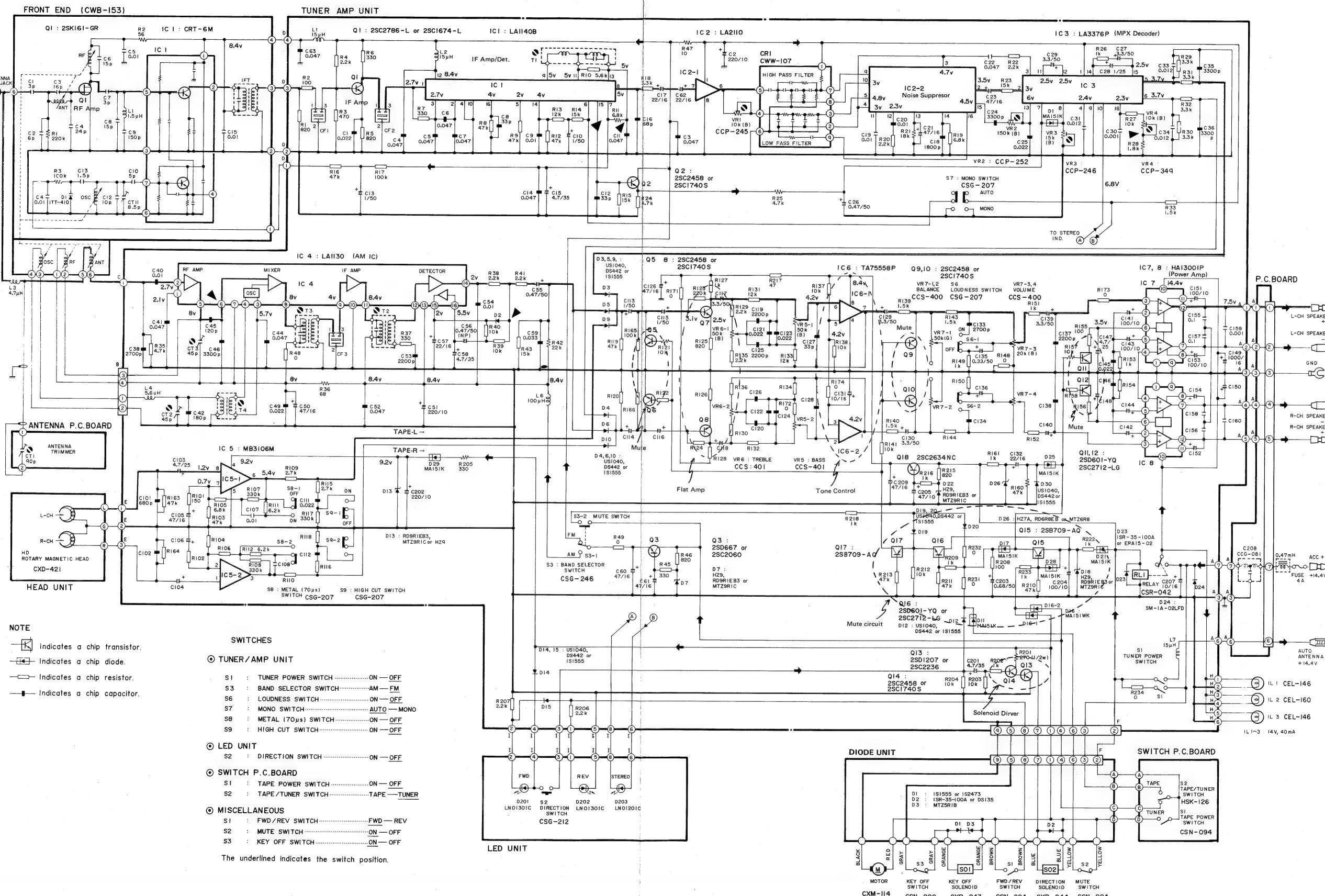


Fig. 32

26

1

2

3

4

5

6

9. CONNECTION DIAGRAM (KPH-4800/EW,ES)

1

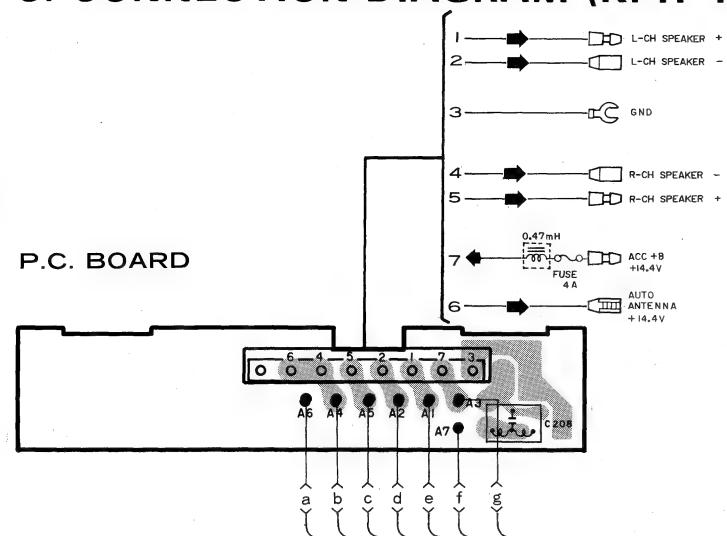
2

3

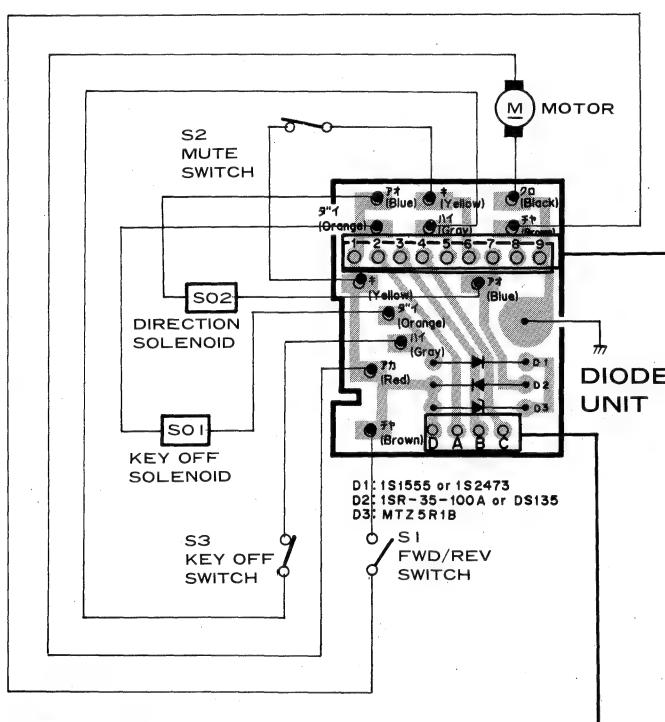
4

A

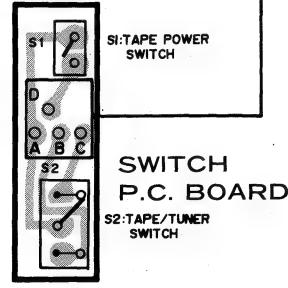
P.C. BOARD



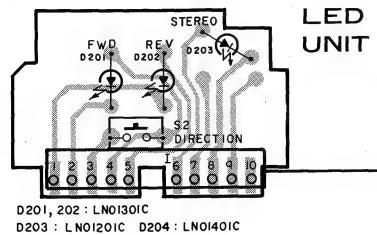
B



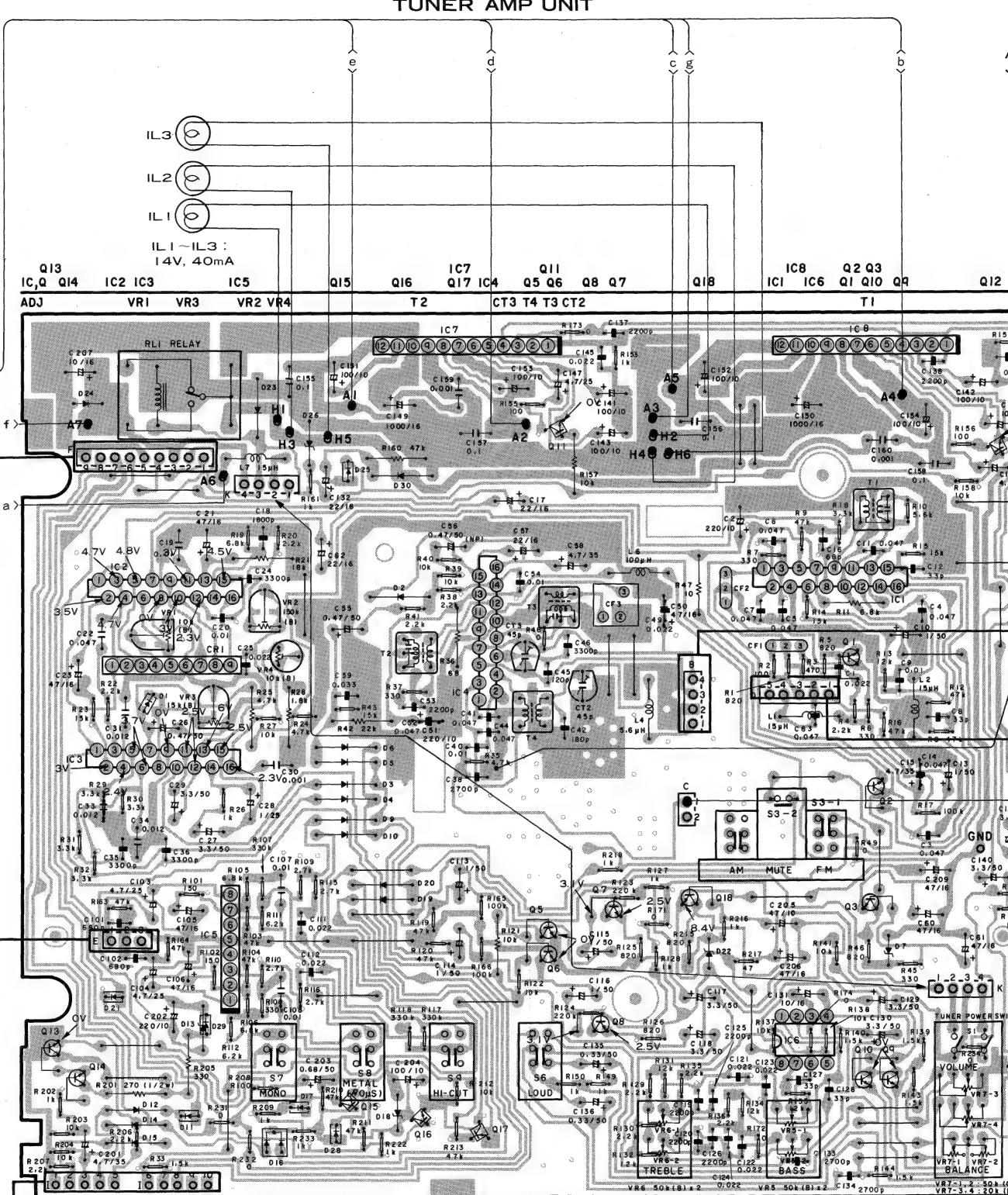
C



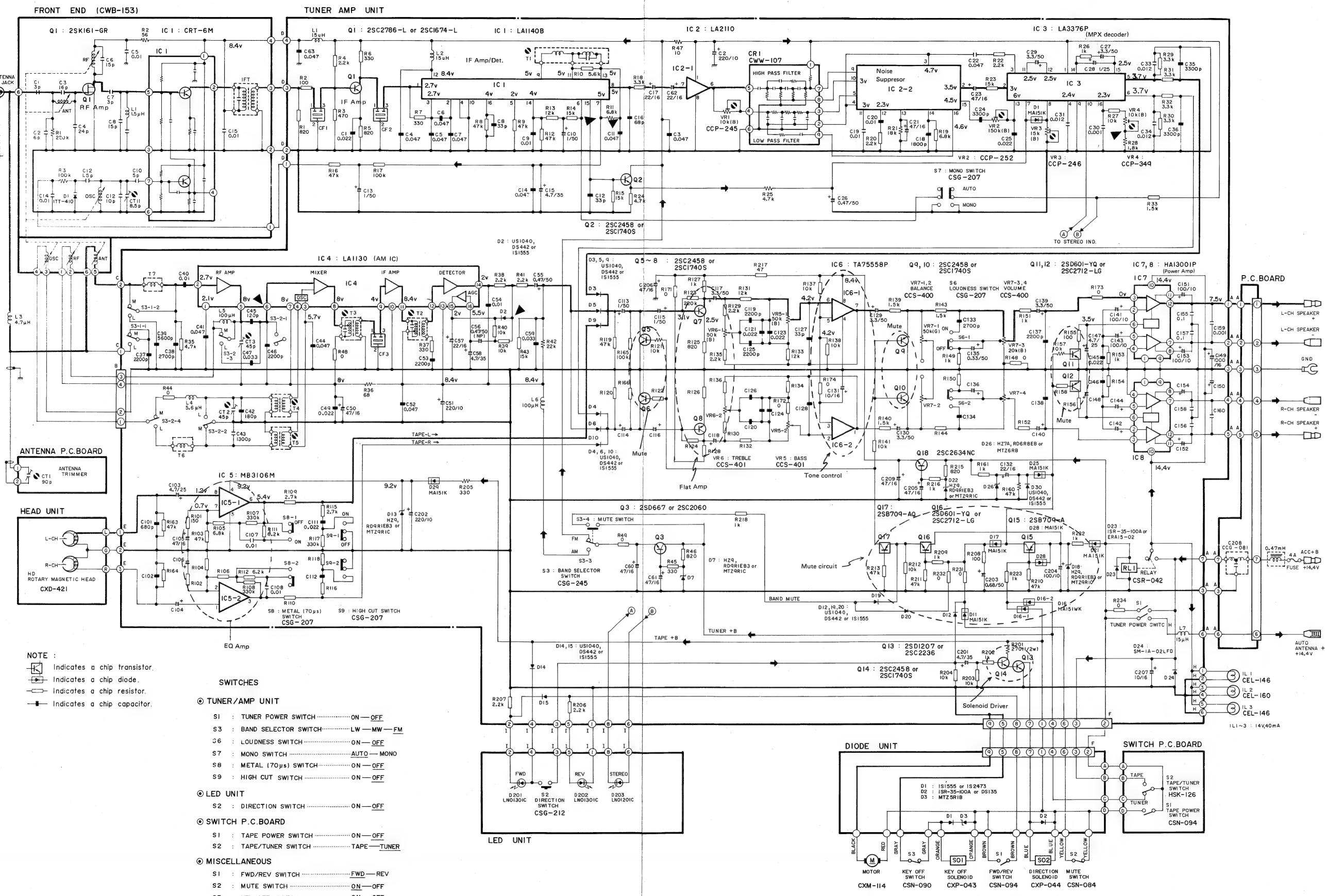
D



TUNER AMP UNIT

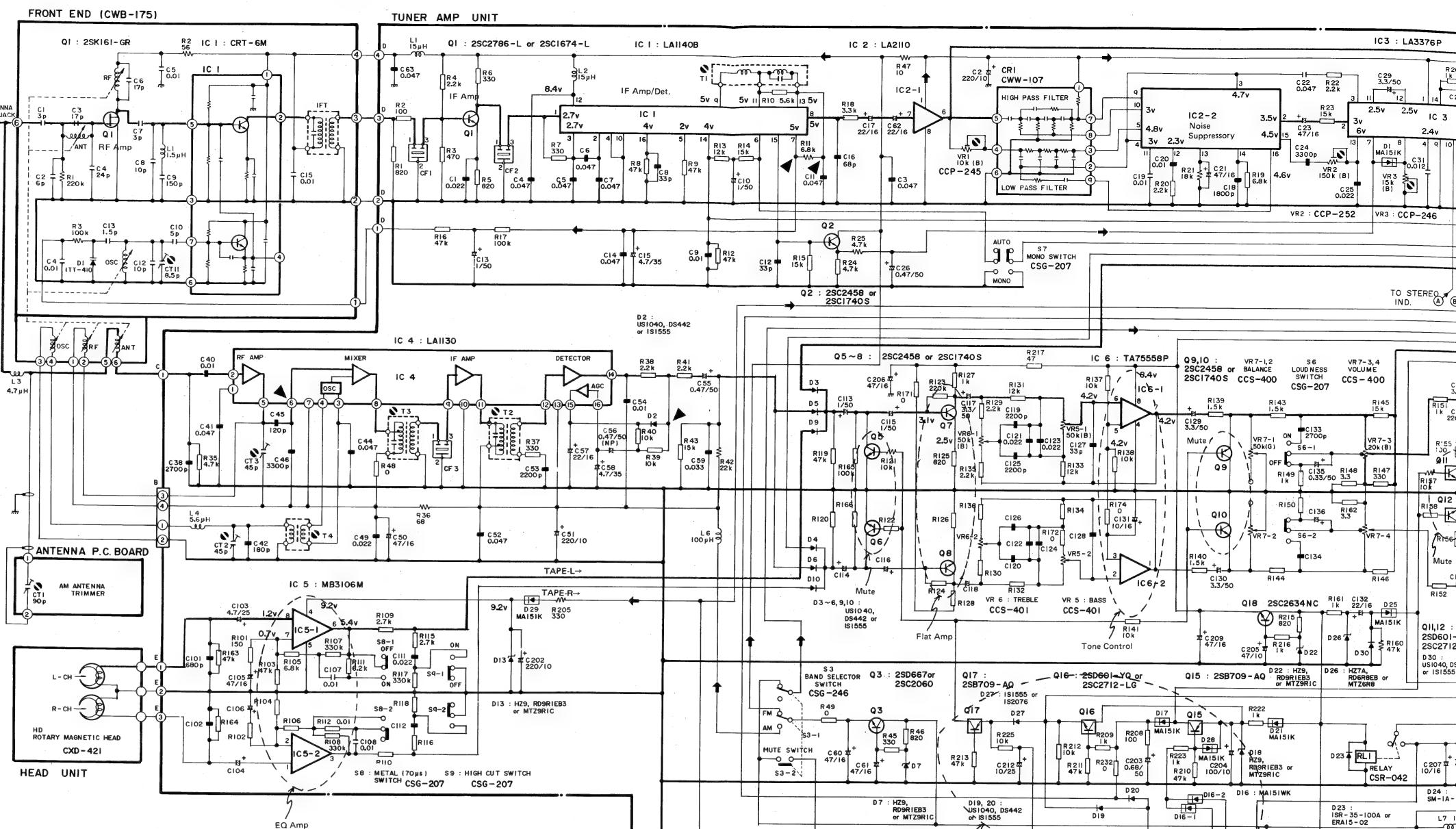


10. SCHEMATIC CIRCUIT DIAGRAM (KPH-4830/EW)



12. SCHEMATIC CIRCUIT DIAGRAM (KPH-4800SDK/WG)

A


NOTE

- ─ Indicates a chip transistor.
- ─+ Indicates a chip diode.
- Indicates a chip resistor.
- Indicates a chip capacitor.

SWITCHES
① TUNER/AMP UNIT

S1 : TUNER POWER SWITCH	ON — OFF
S3 : BAND SELECTOR SWITCH	FM — AM
S5 : SDK SWITCH	ON — OFF
S6 : LOUDNESS SWITCH	ON — OFF
S7 : MONO SWITCH	AUTO — MONO
S8 : METAL (70μs) SWITCH	ON — OFF
S9 : HIGH CUT SWITCH	ON — OFF

② LED UNIT

S2 : DIRECTION SWITCH	ON — OFF
-----------------------	----------

③ SWITCH P.C. BOARD

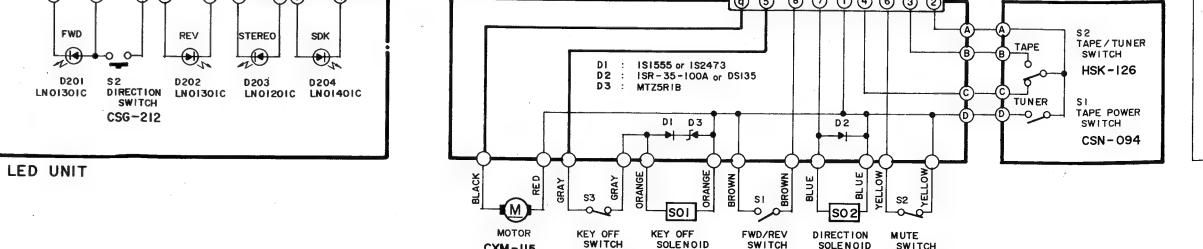
S1 : TAPE POWER SWITCH	ON — OFF
S2 : TAPE/TUNER SWITCH	TAPE — TUNER

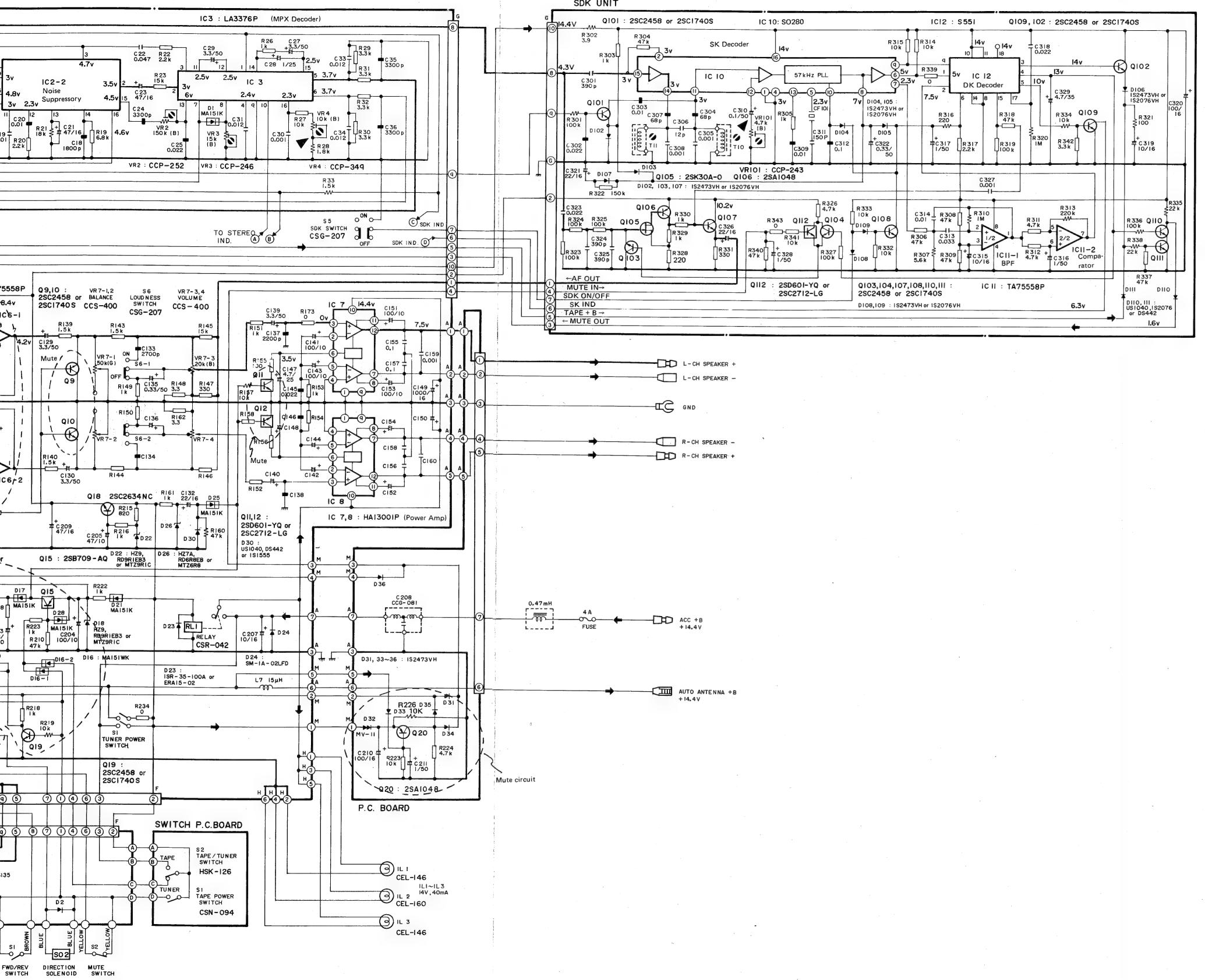
④ MISCELLANEOUS

S1 : FWD/REV SWITCH	FWD — REV
S2 : MUTE SWITCH	ON — OFF
S3 : KEY OFF SWITCH	ON — OFF

⑤ The underlined indicates the switch position.

LED UNIT

DIODE UNIT




A

B

C

D

11. CONNECTION DIAGRAM (KPH-4830/EW)

1

2

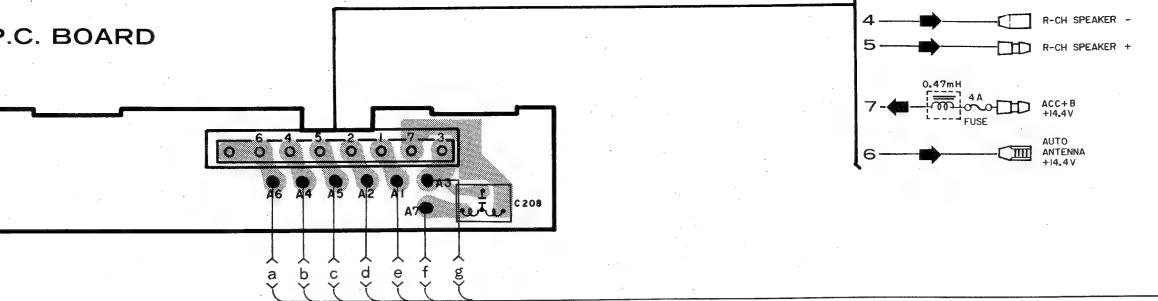
3

4

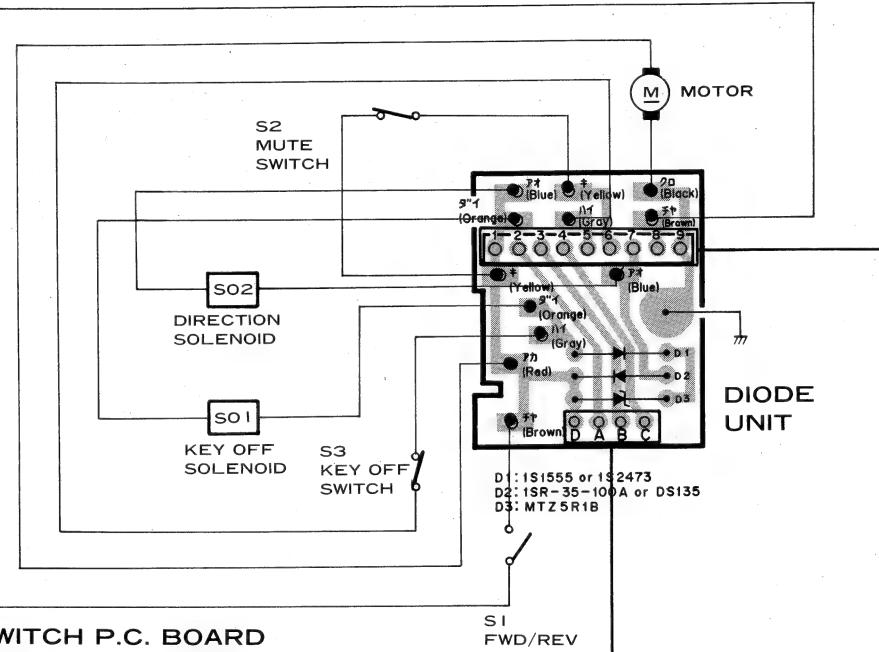
5

A

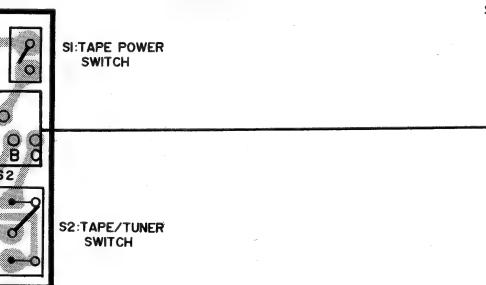
P.C. BOARD



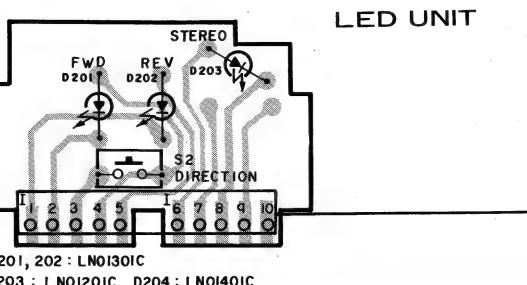
B



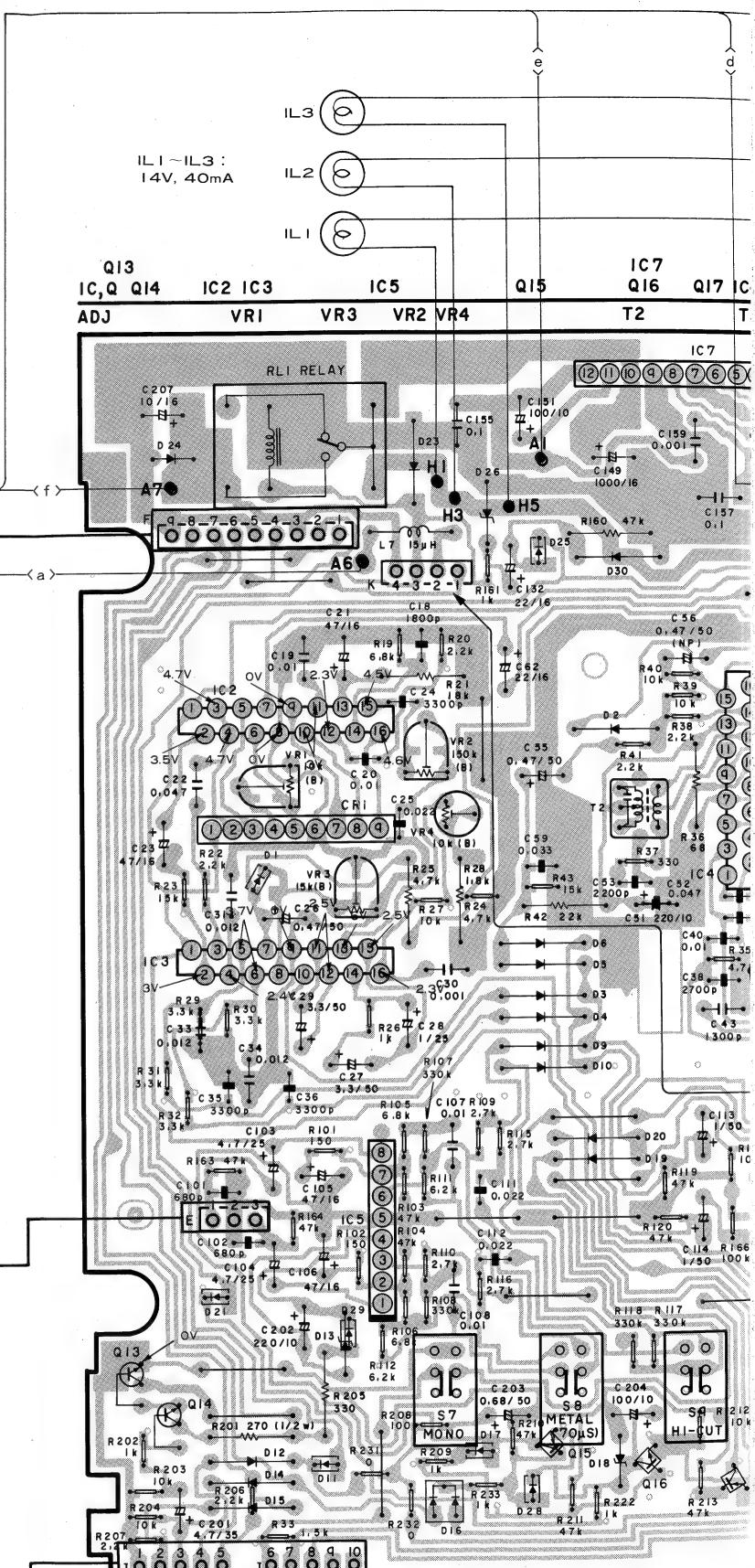
C



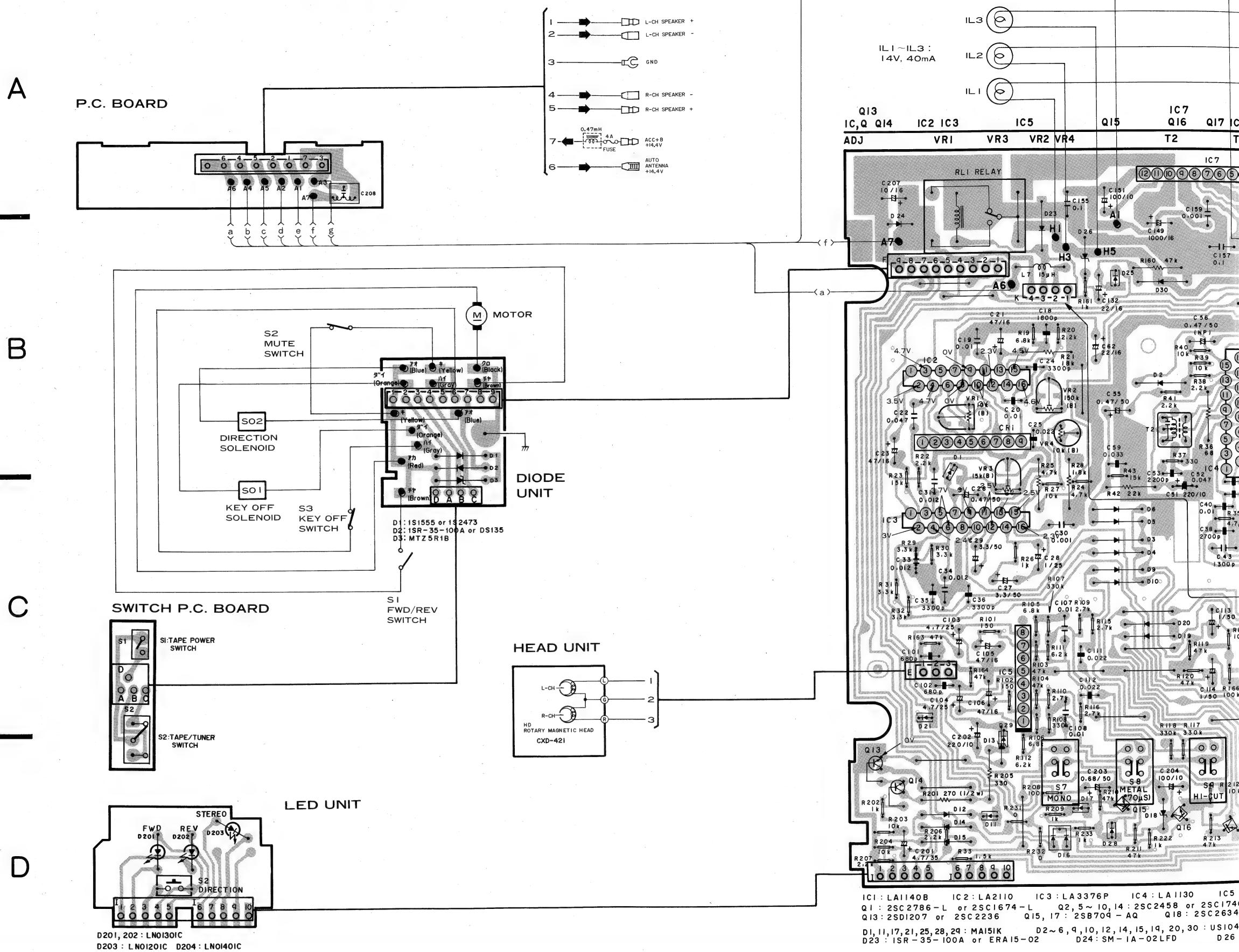
D

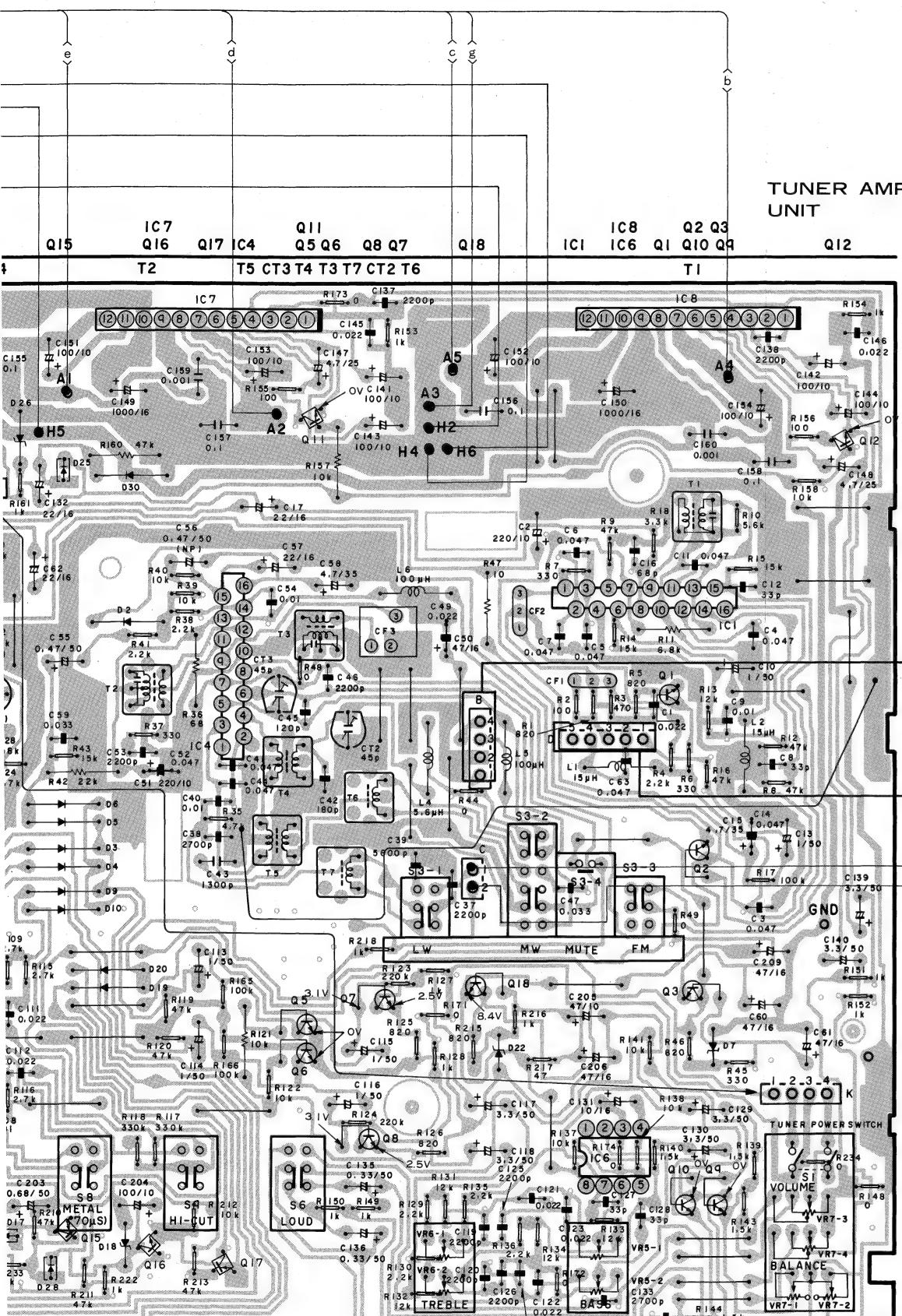


D201, 202 : LN0130IC
D203 : LN0120IC D204 : LN0140IC

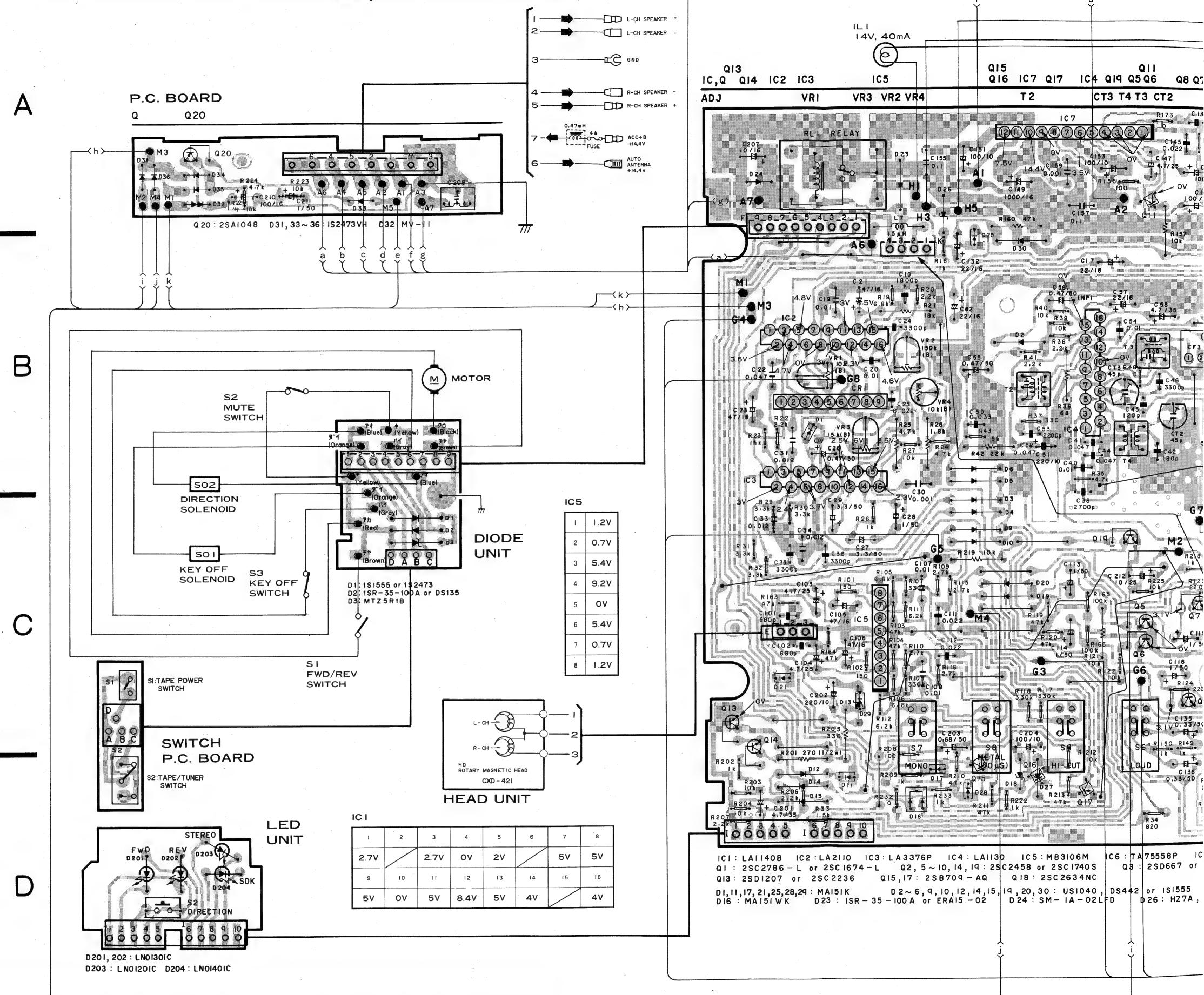


11. CONNECTION DIAGRAM (KPH-4830/EW)





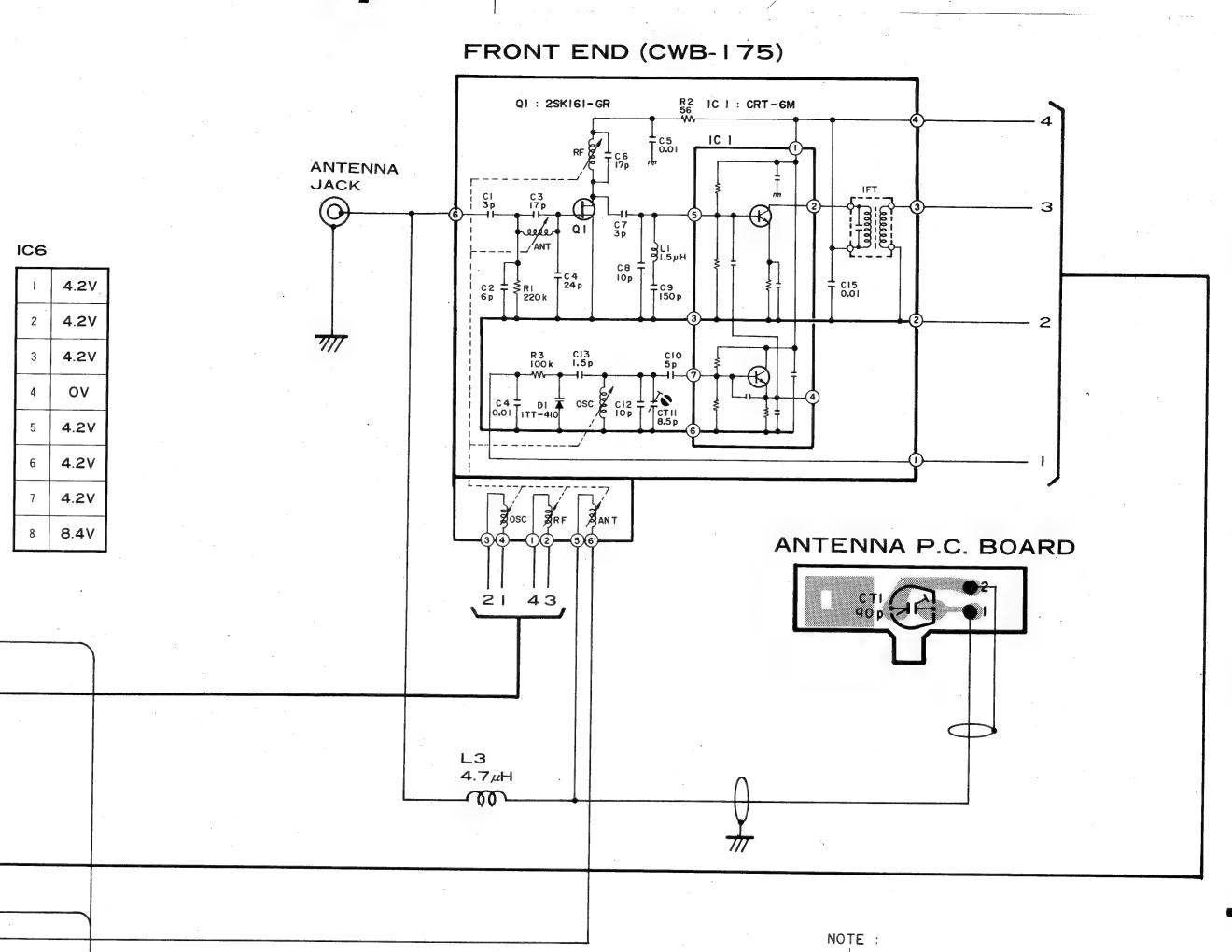
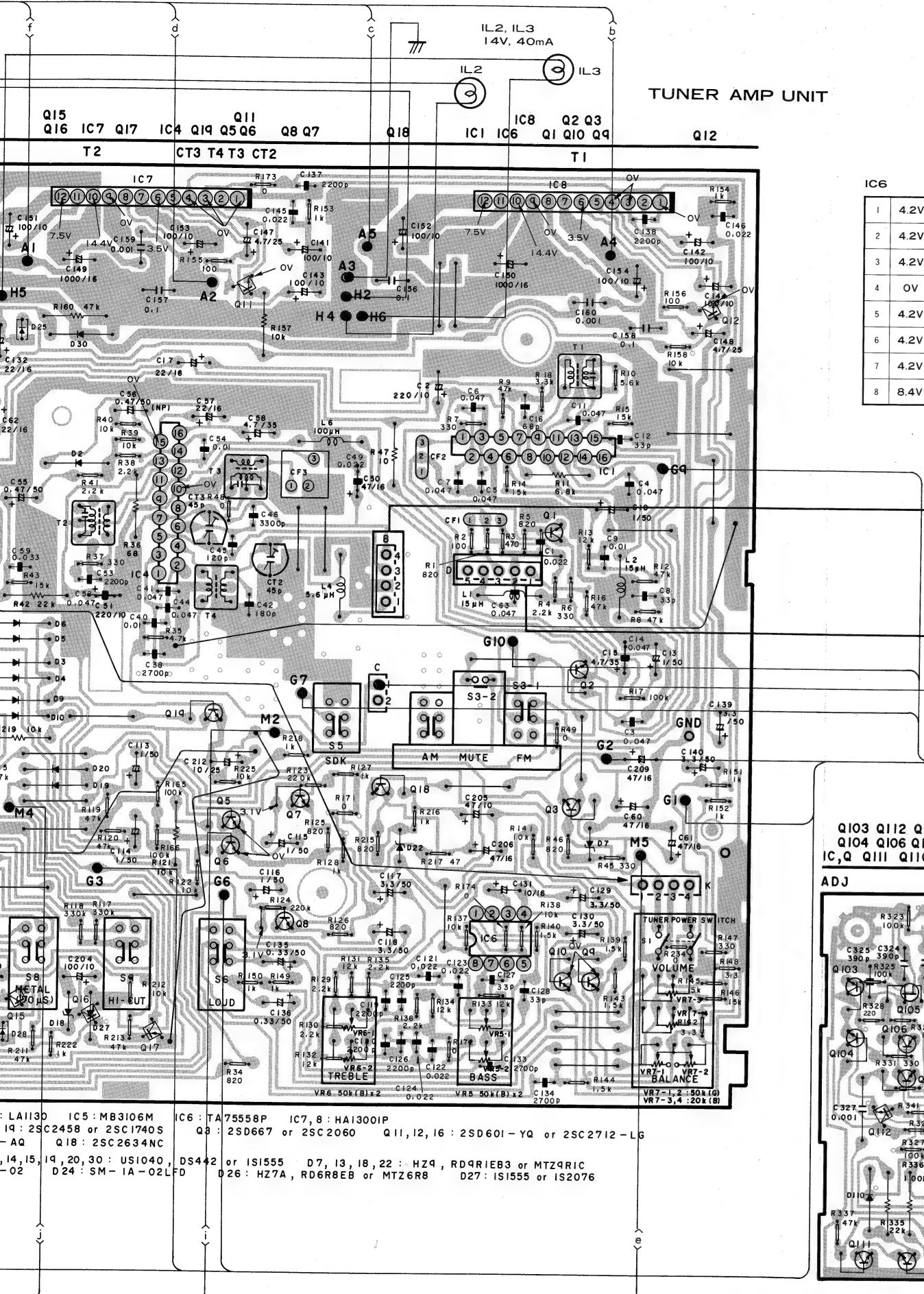
13. CONNECTION DIAGRAM (KPH-4800SDK/WG)



5

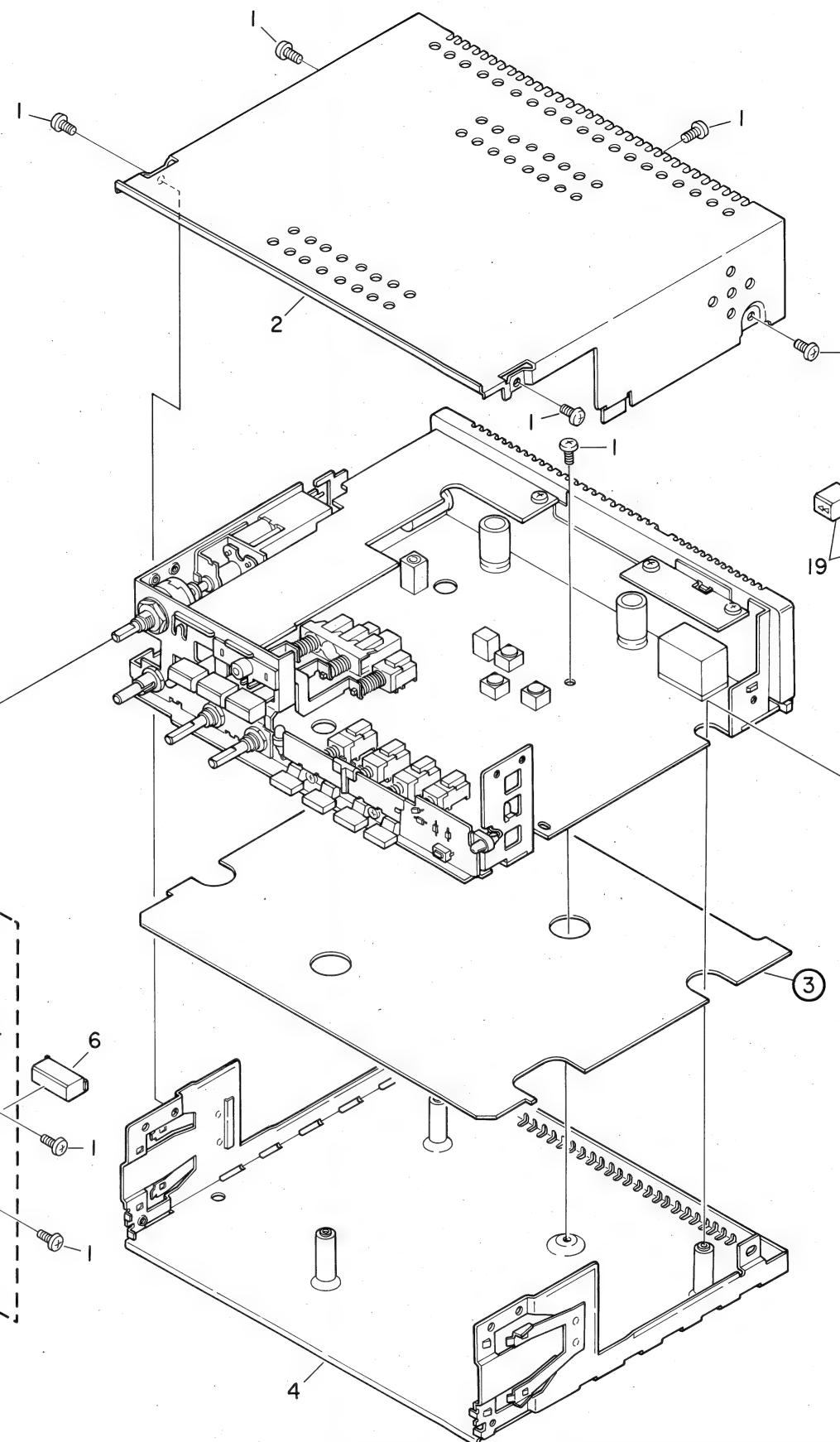
6

7

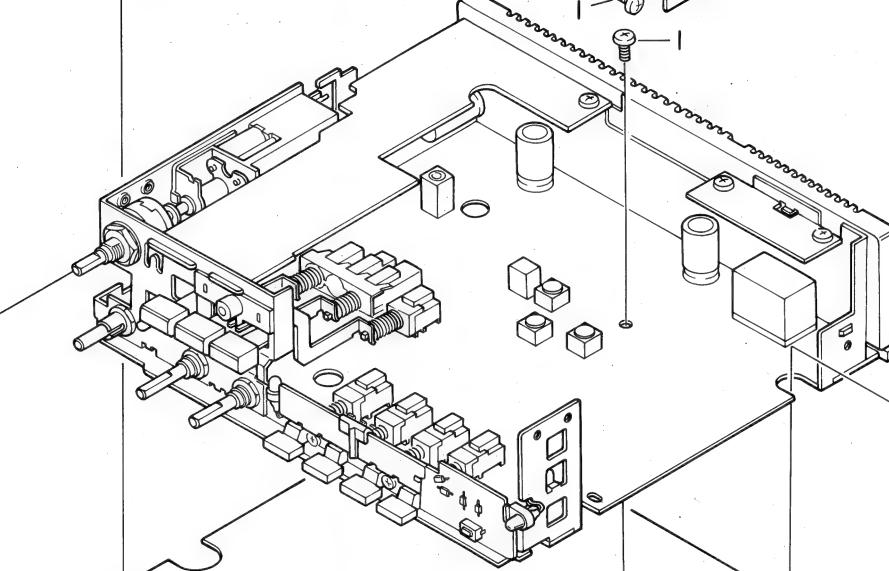


14. CABINET EXPLODED VIEW

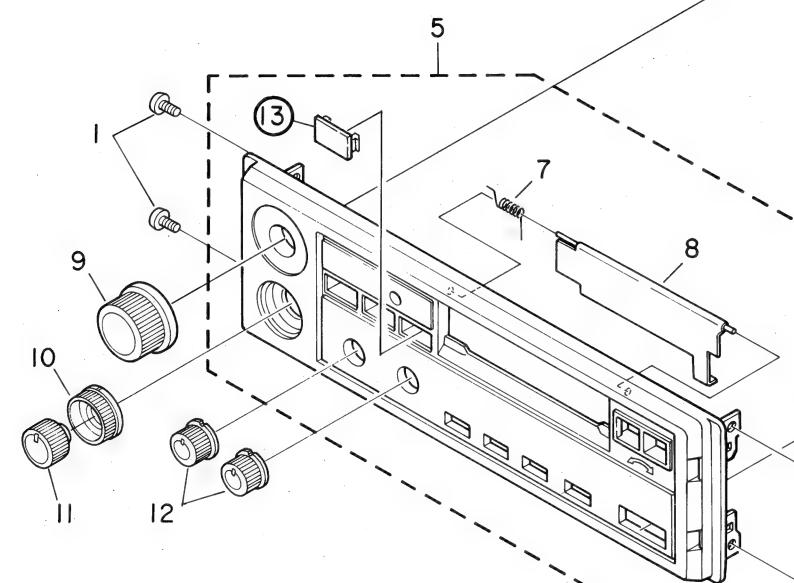
A



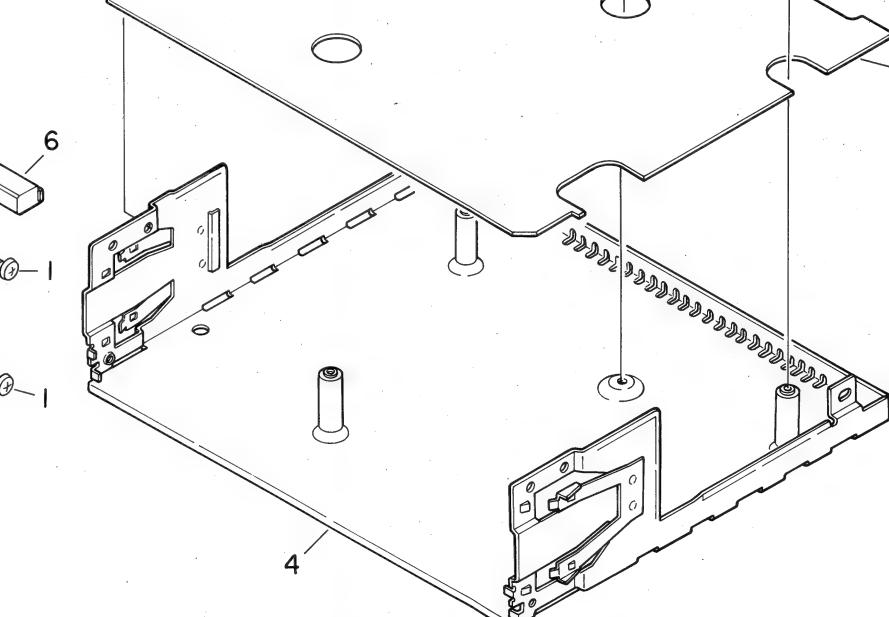
B



C



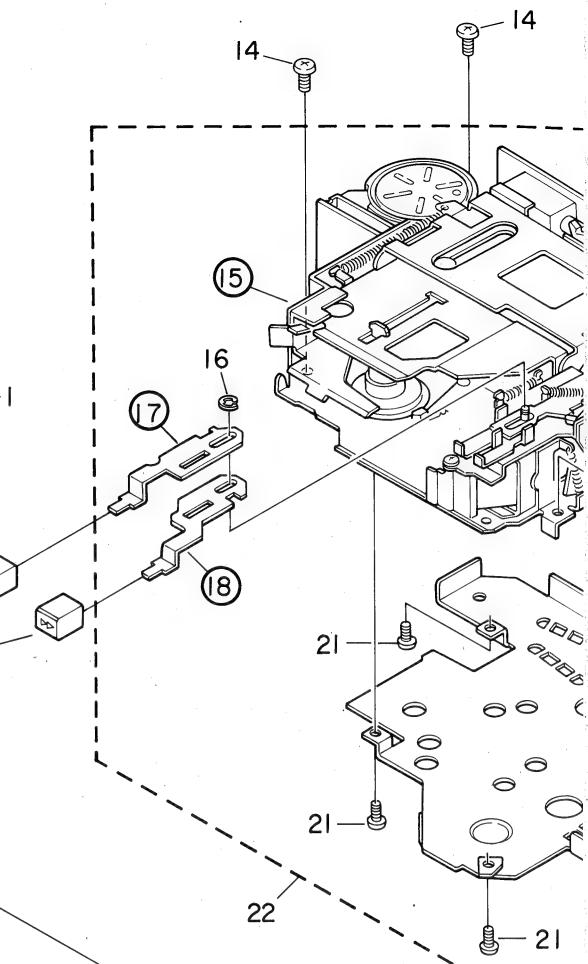
D

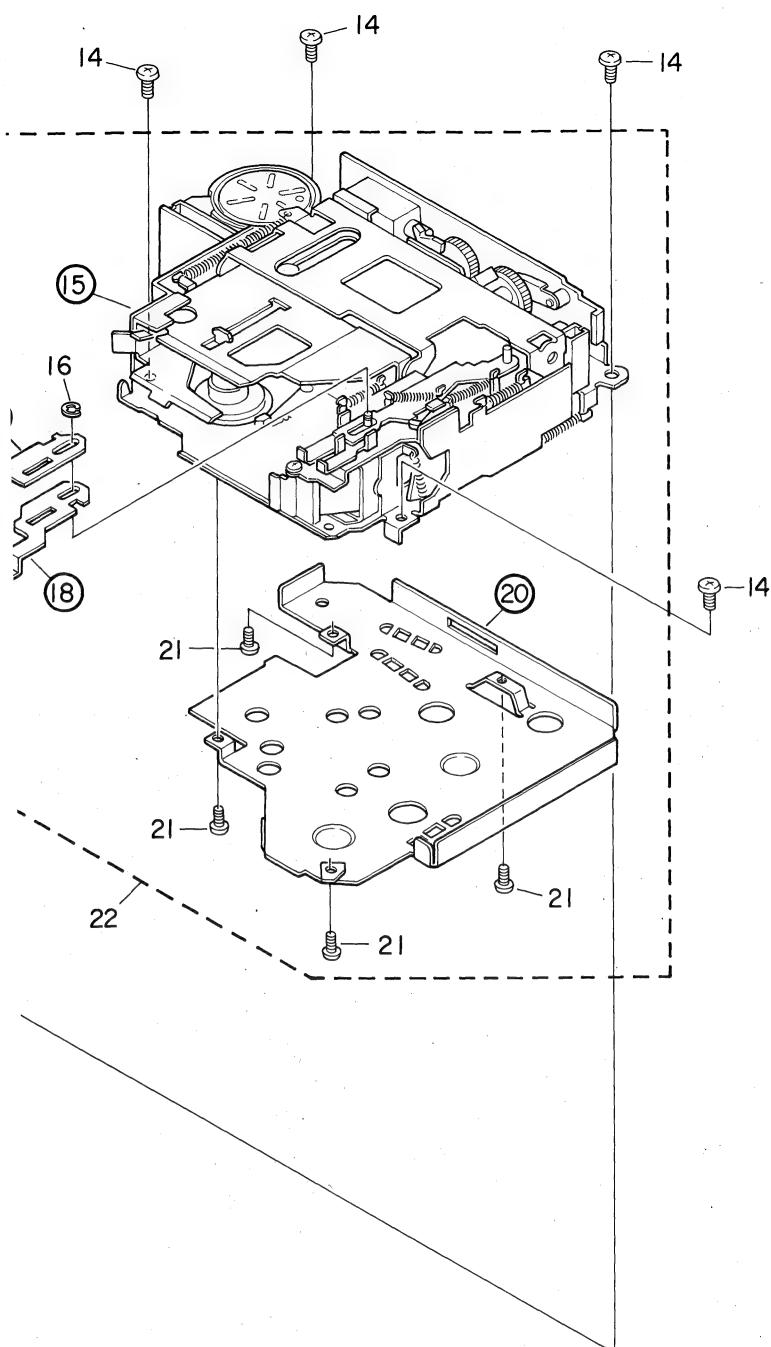


3

4

5



**NOTE:**

- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.

● Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	BMZ30P050FMC	Screw		13.		Cap (KPH-4800/EW,ES)
	2.	CNB-860	Case		14.	BMZ26P050FMC	Screw
	3.		Insulator		15.		Cassette Mechanism Unit
	4.	CXD-348	Chassis Unit		16.	YE20FUC	Washer
	5.	CXD-484	Grille Assy (KPH-4800/WE,ES)		17.		Lever
		CXD-485	Grille Assy (KPH-4830/EW)		18.		Lever
★	6.	CXD-486	Grille Assy (KPH-4800SDK/WG)	★	19.	CAC-914	Button (FF, REW)
	7.	CAC-907	Button (DIRECTION)		20.		Cover
	8.	CBH-875	Spring		21.	BMZ26P030FMC	Screw
		CAT-211	Door		22.	CXK-700	Cassette Mechanism Assy (KPH-4800/EW, ES, KPH-4830/EW)
	★ 9.	CAA-573	Knob (TUNING)			CXK-800	Cassette Mechanism Assy (KPH-4800SDK/WG)
★ 10.	CAA-575	Knob (BALANCE)					
★ 11.	CAA-574	Knob (VOLUME/TUNER POWER SWITCH)					
★ 12.	CAA-597	Knob (BASS, TREBLE)					

A

B

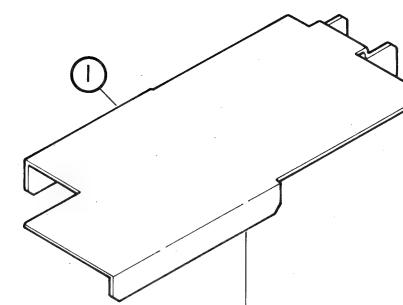
C

D

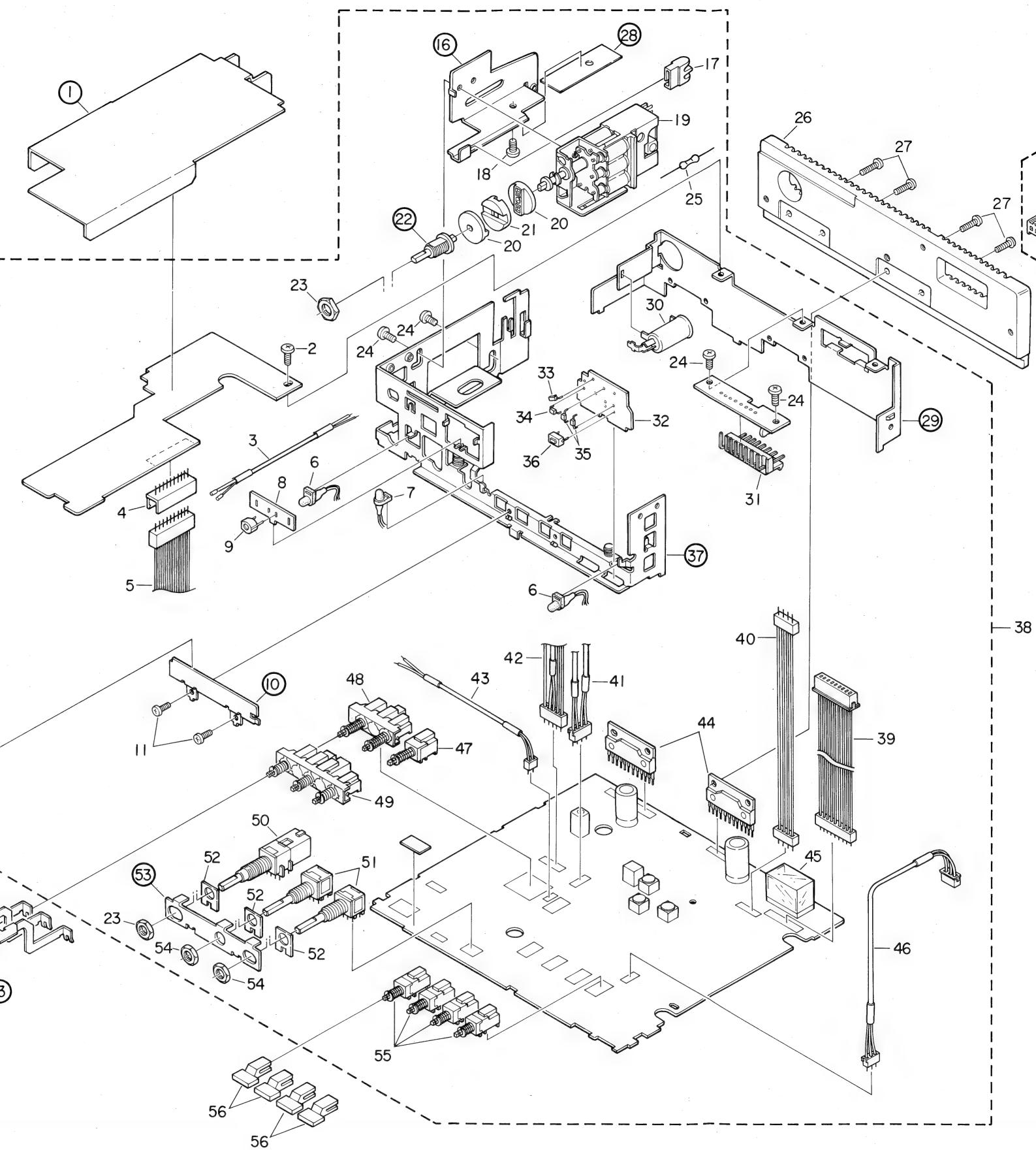
Fig. 38

15. CHASSIS EXPLODED VIEW

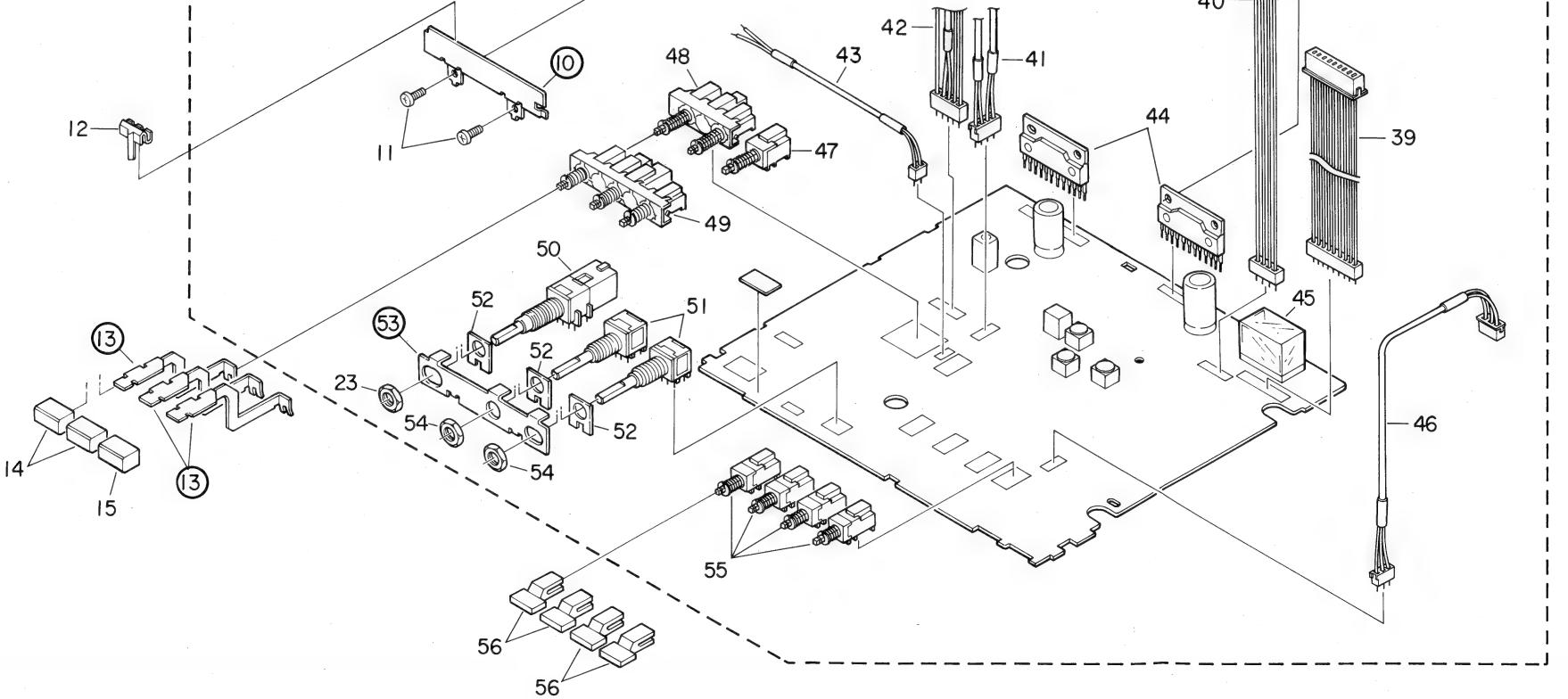
A



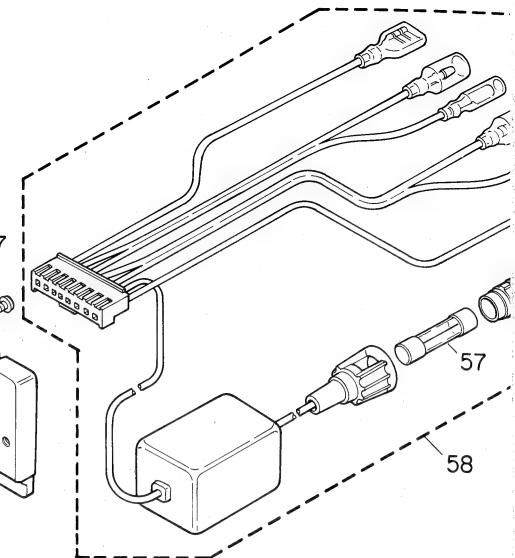
B



C



D



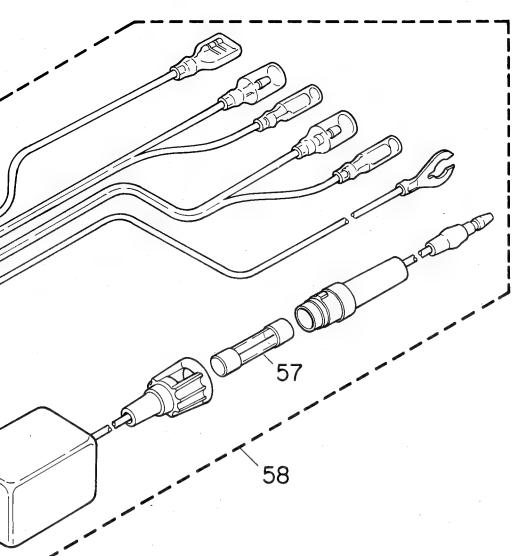
1

2

3

4

5



A

NOTE:

- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★: GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.

● Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.		Insulator (KPH-4800SDK/WG)	★★	36.	CSG-212	Switch (DIRECTION)
	2.	BMZ30P050FMC	Screw (KPH-4800SDK/WG)		37.		Holder Unit
	3.	CDK-160	Connector (2P)		38.	CWM-273	Tuner/Amp Unit
	4.	CKS-275	Plug (10P) (KPH-4800SDK/WG)				(KPH-4800/EW,ES)
	5.	CDF-591	Connector (10p) (KPH-4800SDK/WG)				Tuner/AmP Unit
							(KPH-4830/EW)
★★	6.	CEL-146	Lamp,14V,40mA				
★★	7.	CEL-160	Lamp, 14V, 40mA				
	8.	CNL-708	P. C. Board				
	9.	CCG-090	Antenna Trimmer, 90pF		39.	CDK-083	Connector (9P)
	10.		Holder		40.	CDF-976	Connector (3P)
	11.	BMZ26P050FMC	Screw		41.	CDK-084	Connector (4P)
	12.	CAF-071	Pointer		42.	CDF-631	Connector (5P)
	13.		Lever		43.	CDK-085	Connector (2P)
★	14.	CAC-908	Button (FM, MW)	★★	44.	HA13001P	IC
★	15.	CAC-908	Button (LW) (KPH-4830/EW)		45.	CSR-042	Relay
★	16.	CAC-909	Button (SDK) (KPH-4800SDK/WG)	★★	46.	CDF-975	Connector (3P)
	17.	CNW-331	Holder	★★	47.	CSG-207	Switch (SDK) (KPH-4800SDK/WG)
	18.	BMZ30P030FMC	Guide				
	19.	CWB-153	Screw	★★	48.	CSG-246	Switch (BAND SELECTOR) (KPH-4800/EW, KPH-4800SDK/WG)
		CWB-175	Front End (KPH-4800/EW,ES, (KPH-4830/EW)	★★	49.	CSG-245	Switch (BAND SELECTOR) (KPH-4830/EW)
	20.	CNW-100	Front End (KPH-4800SDK/WG)	★★	50.	CCS-400	Volume/Switch (VOLUME, BALANCE, TUNER POWER)
	21.	CNW-101	Coupler (A)				Volume
			Coupler (B)				(BASS, TREBLE)
	22.		Shaft	★★	51.	CCS-401	
	23.	CBA-067	Nut				
	24.	BMZ30P050FMC	Screw				
	25.	CTF-161	Ferri-Inductor, 4.7μH		52.	CBE-116	Spacer
	26.	CNR-221	Heat Sint		53.		Holder
	27.	BMZ26P080FMC	Screw	★★	54.	CBA-066	Nut
	28.		Insulator	★★	55.	CSG-207	Switch (LOUDNESS,MONO, METAL (70μs), HIGH CUT)
	29.		Holder				
	30.	CKX-006	Antenna Jack	★	56.	CAC-913	Button (LOUDNESS, MONO, METAL (70μs), HIGH CUT)
	31.	CKS-465	Plug (8P)		57.		Fuse, 4A
	32.	CNL-732	P.C. Board		58.	CDK-081	Cord Assy
★	33.	LN01201C	LED (STEREO)				
★	34.	LN01401C	LED (SDK) (KPH-4800SDK/WG)				
★	35.	LN01301C	LED (FWD, REV)				

B

C

D

Fig. 39

16. ELECTRICAL PARTS LIST

NOTE:

When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56×10^1	561	RD1/4PS	5 6 1 J
47kΩ	47×10^3	473	RD1/4PS	4 7 3 J
0.5Ω	0R5		RN2H	0 0 5 K
1Ω	010		RS1P	0 1 0 K

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562×10^1	562	RN1/4SR	5 6 2 1 F
--------	-------------------	-----	---------	-----------

- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.

★★: GENERALLY MOVES FASTER THAN ★.

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- Parts whose parts numbers are omitted are subject to being not supplied.

Tuner Amp Unit (CWM-273) (KPH-4800/EW,ES)

Caution:

The parts of the Tuner Amp Unit and P.C. Board are recorded together.

MISCELLANEOUS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★★ IC1		LA1140B	★★ Q18		2SC2634NC
★★ IC2		LA2110	★ D1,D11,D17,D21,D25,D28,D29		MA151K
★★ IC3		LA3376P		Chip diode	
★★ IC4		LA1130	★ D2-D6,D9,D10,D12,D14,D15,	US1040 or	
★★ IC5		MB3106M	D19,D20,D30	DS442 or	
★★ IC6		TA75558P		1S1555	
★★ IC7,IC8		HA13001P	★ D7,D13,D18,D22	HZ9 or	
★★ Q1		2SC2786-L or		RD9R1EB3 or	
		2SC1674-L		MTZ9R1C	
★★ Q2,Q5-Q10,Q14		2SC2458 or	D8,D27	VACANT	
★★ Q3		2SC1740S	★ D16	Chip Diode	MA151WK
		2SD667 or	★ D23		1SR-35-100A or
		2SC2060			ERA15-02
Q4		VACANT	★ D24		SM-1A-02LFD
★★ Q11,Q12,Q16 Chip Transistor		2SD601-YQ or	★ D26		HZ7A or
		2SD601-YR or		.RD6R8EB or	
		2SD601-YS or		MTZ6R8	
		2SC2712-LG or	L1,L2	Ferri-Inductor, 15μH	CTF-156
		2SC2712-LL or	L3,L5		VACANT
		2SC2712-LY	L4	Ferri-Inductor, 5.6μH	CTF-213
★★ Q13		2SD1207 or	L6	Ferri-Inductor, 100μH	CTF-157
		2SC2236	L7	Ferri-Inductor, 15μH	CTF-078
★★ Q15,Q17 Chip Transistor		2SB709-AQ or	T1	Coil	CTC-172
		2SB709-AR or	T2	Coil	CTE-149
		2SB709-AS	T3	Coil	CTE-150

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
T4	Coil	CTB-146	C22		CQMA473J50L
CF1,CF2	Ceramic Filter	CTF-152 or	C23		CEA470M16LS
		CTF-217	C24,C35,C36	Chip Capacitor	CKSYB332K50
CF3	Filter	CTF-240 or	C26,C55		CEAR47M50LS2
		CTF-100	C27,C29		CEA3R3M50LS
CR1		CWW-107	C28		CSZA010M25
CT2,CT3	Trimmer,	CCG-087	C30		CQSAH102J50
★★ VR1	Semi-fixed, 10kΩ(B)	CCP-245	C31,C33,C34		CQMA123J50L
★★ VR2	Semi-fixed, 150kΩ(B)	CCP-252	C38	Chip Capacitor	CCSSL272J50
★★ VR3	Semi-fixed, 15kΩ(B)	CCP-246	C42	Chip Capacitor	CCSTH181J50
★★ VR4	Semi-fixed, 10kΩ(B)	CCP-349	C45	Chip Capacitor	CCSPH121J50
★★ VR5,VR6	Volume, 50kΩ(B) (BASS, TREBLE)	CCS-401	C46	Chip Capacitor	CCSSL332J50
★★ VR7	Volume/Switch Volume, 20kΩ (B), 50kΩ (G)	CCS-400	C53	Chip Capacitor	CKSYB222K50
	(VOLUME, BALANCE, TUNER POWER)		C56		CCH-108
★★ S3	Switch (BAND SELECTOR)	CSG-246	C57		CEA220M16LS
★★ S6-S9	Switch (LOUDNESS, MONO, METAL (70μs), HIGH CUT)	CSG-207	C59	Chip Capacitor	CKSYF333Z50
RL1	Relay	CSR-042	C101,C102	Chip Capacitor	CKSYB681K50
			C103,C104		CEAN4R7M25L
			C105,C106,C209		CEA470M16LS
			C107,C108		CQMA103J50L
			C111,C112,C121-C124,C145, C146	Chip Capacitor	CKSYB223K25
			C113-C116		CEA010M50LS2
			C117,C118,C129,C130,C139, C140		CEA3R3M50LS

RESISTORS

Mark	Symbol & Description	Part No.		
R1-R10,R12-R20,R22-R24, R26,R27,R29-R33,R35,R37-R41, R43,R45,R46,R48,R49,R101-R112, R115-R120,R122-R141,R143, R144,R148-R156,R158,R161,	RS1/8S□□□J			
R163-R166,R171-R174,R202- R204,R206-R213,R215-R218, R222,R231-R234	RD1/4PM□□□J			
Chip Resistor				
R11,R21,R25,R28,R36,R42,R47, R121,R157,R160,R205				
R201	RD1/2PS□□□JL			

CAPACITORS

Mark	Symbol & Description	Part No.		
C1,C25,C49	Chip Capacitor	CKSYB223K25		
C2,C51		CEA221M10L2		
C3-C7,C11,C14,C41,C44,C52, C63		CKSYF473Z50		
C8,C12	Chip Capacitor	CCSSL330J50		
C9,C20,C40,C54		CKSYB103K50		
	Chip Capacitor			
C10		CEA010M50L2		
C13		CEA010M50LS2		
C15,C58		CEA4R7M35LS		
C16	Chip Capacitor	CCSCH680J50		
C17,C62		CEA220M16LS		
C18	Chip Capacitor	CKSYB182K50		
C19		CQMA103J50L		
C21,C50,C60,C61		CEA470M16LS		

Tuner Amp Unit (CWM-274) (KPH-4830/EW)

Caution:
The parts of the Tuner Amp Unit and P.C. Board are recorded together.

MISCELLANEOUS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.	
★ ★ IC1	LA1140B		T4	Coil	CTB-146	
★ ★ IC2	LA2110		T5	Coil	CTB-145	
★ ★ IC3	LA3376P		T6	Coil	CTB-148	
★ ★ IC4	LA1130		T7	Coil	CTB-147	
★ ★ IC5	MB3106M		CF1,CF2	Ceramic Filter	CTF-152 or	
★ ★ IC6	TA75558P		CF3	Filter	CTF-217	
★ ★ IC7,IC8	HA13001P				CTF-240 or	
★ ★ Q1	2SC2786-L or		CR1		CTF-100	
	2SC1674-L		CT2,CT3	Trimmer, 45pF	CWW-107	
★ ★ Q2,Q5—Q10,Q14	2SC2458 or		★ ★ VR1	Semi-fixed, 10kΩ(B)	CCG-087	
★ ★ Q3	2SC1740S		★ ★ VR2	Semi-fixed, 150kΩ(B)	CCP-245	
	2SD667 or		★ ★ VR3	Semi-fixed, 15kΩ(B)	CCP-252	
	2SC2060		★ ★ VR4	Semi-fixed, 10kΩ(B)	CCP-246	
Q4	VACANT		★ ★ VR5,VR6	Volume, 50kΩ(B) (TREBLE, BASS)	CCS-401	
★ ★ Q11,Q12,Q16, Chip Transistor	2SD601-YQ or		★ ★ VR7	Volume/Switch Volume, 20kΩ(B), 50kΩ(G)	CCS-400	
	2SD601-YR or			(VOLUME, BALANCE, TUNER POWER)		
	2SD601-YS or		★ ★ S3	Switch (BAND SELECTOR)	CSG-245	
	2SC2712-LG or		★ ★ S6—S9	Switch (LOUDNESS, MONO, METAL (70μS), HIGH CUT)	CSG-207	
	2SC2712-LL or			RL1	Relay	CSR-042
★ ★ Q13	2SD1207 or					
	2SC2236					
★ ★ Q15,Q17	Chip Transistor	2SB709-AQ or				
		2SB709-AR or				
		2SB709-AS				
★ ★ Q18	2SC2634NC					
★ D1,D11,D17,D21,D25,D28, D29	MA151K					
Chip Diode			R1—R10,R12—R20,R22—R24, R26,R27,R29—R33,R35,R37— R46,R48,R49,R101—R112,R115— R120,R122—R141,R143,R144, R148—R156,R158,R161,		RS1/8S□□□J	
★ D2—D6,D9,D10,D12,D14,D15, D19,D20,D30	US1040 or					
	DS442 or					
★ D7,D13,D18,D22	1S1555					
	HZ9 or		R163—R166,R171—R174,R202— R204,R206—R213,R215—R218, R222,R231—R234			
D8,D27	RD9R1EB3 or					
	MT29R1C		Chip Resistor			
	VACANT		R11,R21,R25,R28,R36,R42,		RD1/4PM□□□J	
★ D16	Chip Diode	MA151WK				
★ D23		1SR-35-100A or	R47,R121,R157,R160,R205			
★ D24		ERA15-02	R201		RD1/2PS□□□JL	
★ D26		SM-1A-02LFD				
		HZ7A or				
L1,L2	Ferri-Inductor, 15μH	RD6R8EB or				
L3		MTZ6R8				
L4	Ferri-Inductor, 5.6μH	CTF-156	C1,C25,C49	Chip Capacitor	CKSYB223K25	
		VACANT	C2,C51		CEA221M10L2	
L5,L6	Ferri-Inductor, 100μH	CTF-213	C3—C7,C11,C14,C41,C44, C52,C63	Chip Capacitor	CKSYF473Z50	
L7	Ferri-Inductor, 15μH	CTF-157	C8,C12	Chip Capacitor	CCSSL330J50	
T1	Coil	CTF-078	C9,C20,C40,C54		CKSYB103K50	
T2	Coil	CTC-172				
T3	Coil	CTE-149				
		CTE-150	C10		CEA010M50L2	
			C13		CEA010M50LS2	
			C15,C58		CEA4R7M35LS	

Mark	Symbol & Description	Part No.	Tuner Amp Unit (CWM-275) (KPH-4800SDK/WG)		
C16	Chip Capacitor	CCSCH680J50	Caution: The parts of the Tuner Amp Unit, P.C. Board and SDK Unit are recorded together.		
C17,C62		CEA220M16LS			
C18	Chip Capacitor	CKSYB182K50			
C19		CQMA103J50L			
C21,C50,C60,C61		CEA470M16LS			
Mark	Symbol & Description	Part No.	MISCELLANEOUS		
C22		CAMA473J50L	★★ IC1		LA1140B
C23		CEA470M16LS	★★ IC2		LA2110
C24,C35,C36	Chip Capacitor	CKSYB332K50	★★ IC3		LA3376P
C26,C55		CEAR47M50LS2	★★ IC4		LA1130
C27,C29		CEA3R3M50LS	★★ IC5		MB3106M
C28		CSZA010M25	★★ IC6,IC11		TA75558P
C30		CQSAH102J50	★★ IC7,IC8		HA13001P
C31,C33,C34		CQMA123J50L	★★ IC9		VACANT
C37,C46	Chip Capacitor	CCSSL222J50	★★ IC10		S0280
C38	Chip Capacitor	CCSSL272J50	★★ IC12		S551
C39		CKSYB562J50	★★ Q1		2SC2786-L or
C42	Chip Capacitor	CCSTH181J50	★★ Q2,Q5-Q10,Q14,Q19,		2SC1674-L
C43		CQSAH132J50	Q101-Q104,Q107-Q111		2SC2458 or
C45	Chip Capacitor	CCSPH121J50	★★ Q3		2SC1740S
C47	Chip Capacitor	CKSYF333Z50			2SD667 or
C53	Chip Capacitor	CKSYB222K50			2SC2060
C56		CCH-108			VACANT
C57		CEA220M16LS	Q4		2SD601-YQ or
C59	Chip Capacitor	CKSYF333Z50	★★ Q11,Q12,Q16,Q112		2SD601-YR or
C101,C102	Chip Capacitor	CKSYB681K50		Chip Transistor	2SD601-YS or
C103,C104		CEANL4R7M25L	★★ Q13		
C105,C106,C209		CEA470M16LS			2SC2712-LG or
C107,C108		CQMA103J50L			2SC2712-LL or
C111,C112,C121-C124,C145, C146	Chip Capacitor	CKSYB223K25			2SC2712-LY
					2SD1207 or
					2SC2236
C113-C116		CEA010M50LS2	★★ Q15,Q17	Chip Transistor	2SB709-AQ or
C117,C118,C129,C130,C139, C140		CEA3R3M50LS	★★ Q18		2SB709-AR or
C119,C120,C125,C126,C137, C138	Chip Capacitor	CKSYB222K50	★★ Q20,Q106		2SB709-AS
					2SC2634NC
					2SA1048
C127,C128	Chip Capacitor	CCSSL330J50	★★ Q105		2SK30A-O
C131		CEA100M16L2	★ D1,D11,D17,D21,D25,D28,		MA151K
C132		CEA220M16LS	D29	Chip Diode	
C133,C134	Chip Capacitor	CKSYB272J50	★ D2-D6,D9,D10,D12,D14,D15,		US1040 or
C135,C136		CEAR33M50L2	D19,D20,D30,D103		DS442 or
C141-C144,C151-C154		CEA101M10L2			1S1555
C147,C148		CEA4R7M25L2	★ D7,D13,D18,D22		HZ9 or
C149,C150		CEA102M16L2			RD9R1EB3 or
C155-C158		CQMA104J50L			MTZ9R1C
C159,C160		CQMA102J50L	D8		VACANT
C201		CEA4R7M35LS	★ D16	Chip Diode	MA151WK
C202		CEA221M10L2	★ D23		1SR-35-100A or
C203		CEAR68M50LS2			ERA15-02
C204		CEA101M10L2	★ D24		SM-1A-02LF
C205,C206		CEA470M16L2	★ D26		HZ7A or
C207		CEA100M16L2	★ D27		RD6R8EB or
C208		CCG-081			MTZ6R8
			★ D31,D33-D36		1S1555 or
					1S2076
					1S2473VH

Mark	Symbol & Description	Part No.	RESISTOR		
Mark	Symbol & Description	Part No.			
★ D32		MV-11			
★ D102,D104-D109		1S2473VH or 1S2076VH	R1-R10,R12-R20,R22-R24,R26, R27,R29-R41,R43,R45,R46,R48,	RS1/8S□□□J	
★ D110,D111		US1040 or 1S2076 or DS442	R49,R101-R112,R115-R120, R122-R141,R143-R156,R158, R161-R166,R171-R174,		
L1,L2	Ferri-Inductor, 15μH	CTF-156	R202-R204,R206-R213,R215-		
L3,L5		VACANT	R218,R222-R225,R232-R234,R303-		
L4	Ferri-Inductor, 5.6μH	CTF-213	R306,R308,R309,R311,R312,R314,		
L6	Ferri-Inductor, 100μH	CTF-157	R315,R317-R319,R322,R323-R333, R337,R339-R343 Chip Resistor		
L7	Ferri-Inductor, 15μH	CTF-078			
T1	Coil	CTC-172	R11,R21,R25,R28,R42,R47,R121, R157,R160,R205,R219,R301,	RD1/4PM□□M	
T2	Coil	CTE-149	R302,R307,R310,R313,R316,		
T3	Coil	CTE-150	R320,R321,R334-R336,R338		
T4	Coil	CTB-146	R201	RD1/2PS□□□JL	
T10,T11	Coil	CTF-125	R226	RD1/6PS□□□J	
CF1,CF2	Ceramic Filter	CTF-152 or CTF-217			
CF3	Filter	CTF-240 or CTF-100			
CAPACITORS					
Mark	Symbol & Description	Part No.			
CF101	Ceramic Resonator	CTF-109	C1,C25,C49	CKSYB223K25	
CR1		CWW-107	C2,C51	CEA221M10L2	
CT2,CT3	Trimmer, 45pF	CCG-087	C3-C7,C11,C14,C41,C44,C52, C63	CKSYF473Z50	
★ ★ VR1	Semi-fixed, 10kΩ(B)	CCP-245	C8,C12	CCSSL330J50	
★ ★ VR2	Semi-fixed, 150kΩ(B)	CCP-252	C9,C20,C40,C54	CKSYB103K50	
★ ★ VR3	Semi-fixed, 15kΩ(B)	CCP-246	Chip Capacitor		
★ ★ VR4	Semi-fixed, 10kΩ(B)	CCP-349	C10,C13	CEA010M50LS2	
★ ★ VR5,VR6	Volume, 50kΩ(B) (BASS, TEBLE)	CCS-401	C15,C58	CEA4R7M35LS	
★ ★ VR7	Volume/Switch	CCS-400	C16	CCSCH680J50	
	Volume, 20kΩ(B), 50kΩ(G)				
	(VOLUME, BALANCE, TUNER POWER)		C17,C62	CEA220M16LS	
★ ★ VR101	Semi-fixed, 4.7kΩ(B)	CCP-243	C18	CKSYB182K50	
★ ★ S3	Switch (BAND SELECTOR)	CSG-246	C19	CQMA103J50L	
★ ★ S5-S9	Switch	CSG-207	C21,C50,C60,C61	CEA470M16LS	
	(SDK,LOUDNESS, MONO, METAL(70μs), HIGH CUT)		C22	CQMA473J50L	
RL1	Relay	CSR-042	C23	CEA470M16LS	
			C24,C35,C36	CKSYB332K50	
			Chip Capacitor	CEAR47M50LS2	
			C26,C55	CEA3R3M50LS	
			C27,C29	CSZA010M25	
			C28		
			C30	CQSAH102J50	
			C31,C33,C34	CQMA123J50L	
			C38	CCSSL272J50	
			C42	CCSTH181J50	
			C45	CCSPH121J50	
			C46	CCSSL332J50	
			C53	CKSYB222K50	
			C56	CCH-108	
			C57	CEA220M16LS	
			C59	CKSYF33Z50	

Mark	Symbol & Description	Part No.	Antenna P.C. Board		
C101,C102	Chip Capacitor	CKSYB681K50			
C103,C104		CEANL4R7M25L			
Head Unit					
C105,C106,C209		CEA470M16LS	Mark	Symbol & Description	Part No.
C107,C108		CQMA103J50L	CT1	Antenna Trimmer, 90pF	CCG-090
C111,C112,C121-C124,C145,		CKSYB223K25			
C146	Chip Capacitor	CEA010M50LS2			
C113-C116		CEA3R3M50LS			
C117,C118,C129,C130,C139,C140		CKSYB222K50			
C119,C120,C125,C126,C137,					
C138	Chip Capacitor	CCSSL330J50			
C127,C128	Chip Capacitor	CEA100M16L2	Mark	Symbol & Description	Part No.
C131		CEA220M16LS	★ D201,D202	LED (FWD, REW)	LN01301C
C132		CQSYB272J50	★ D203	LED (STEREO)	LN01201C
C133,C134	Chip Capacitor	CEAR33M50L2	★ D204	LED (SDK) (KPH-4800SDK/WG)	LN01401C
C135,C136		C141-C144,C151-C154	★★ S2	Switch (DIRECTION)	CSG-212
		CEA101M10L2			
		CEA4R7M25L2			
		CEA102M16L2			
		C147,C148			
		C149,C150			
		C155-C158			
		C159,C160			
C201		CEA4R7M35LS			
C202		CEA221M10L2	★★ S1	Switch (TAPE POWER)	CSN-094
C203		CEAR68M50LS2	★★ S2	Switch (TAPE/TUNER)	HSK-126
C204		CEA101M10L2			
C205,C206		CEA470M16L2			
C207		CEA100M16L2	★ D1		1S1555 or
C208		CCG-081	★ D2		1S2473
C210		CEA101M16LL	★ D3		1SR-35-100A or
C211		CEA010M50L2			DS135
C212		CEA100M25LS			MTZ5R1B
C301,C324,C325		CCDSL391J50L			
C302	Chip Capacitor	CKSYB223K25			
C303,C309	Chip Capacitor	CKSYB103K50			
C304,C307	Chip Capacitor	CCSCH680J50			
C305,C308		CQSAH102J50			
C306		CCPCH120J50	L3	Ferri-Inductor, 4.7μH	CTF-161
C310		CEA0R1M50LS2	★★ IL1,IL3	Lamp, 14V, 40mA	CEL-146
C311		CQSAH151J50	★★ IL2	Lamp, 14V, 40mA	CEL-160
C312	Chip Capacitor	CKSYF104Z25	★★ M	Motor	CXM-113
C313		CQMA333J50L	★ SO1	Solenoid (KEY OFF)	CXP-043
C314		CQMA103J50L	★ SO2	Solenoid (DIRECTION)	CXP-044
C315,C319		CEA100M16L2	★★ S1	Switch (FWD/REV)	CSN-094
C316,C317,C328		CEA010M50LS2	★★ S2	Switch (MUTE)	CSN-084
C318		CKPYY223N16	★★ S3	Switch (KEY OFF)	CSN-090
C320		CEA101M16LL			
C321,C326		CEA220M16LS			
C322		CEAR33M50LS2			
C323		CQMA223J50L			
C327		CKPYB102K50			
C329		CEA4R7M35LS			
Miscellaneous Parts List					
Mark	Symbol & Description	Part No.			
	Front End (KPH-4830/EW, KPH-4800/EW,ES)	CWB-153			
	Front End (KPH-4800SDK/WG)	CWB-175			

17. PACKING METHOD

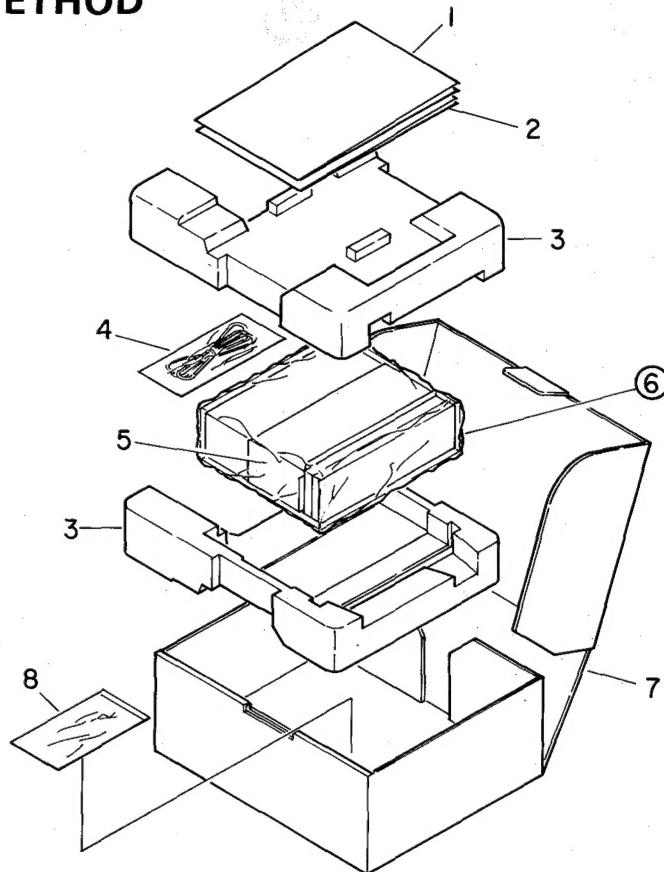


Fig. 40

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.

● **Parts List**

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
1.	CRB-504		Owner's Manual (KPH-4800/ES) (Arabic)			CHD-874	Carton (KPH-4830/EW)
CRD-515			Owner's Manual (KPH-4800/EW, KPH-4830/EW) (Swedish, Norwegian, Dutch)			CHD-876	Carton (KPH-4800SDK/WG)
CRD-516			Owner's Manual (KPH-4800SDK/WG) (German, French)	8.	CEA-885	Accessory Kit	
2.	CRD-514		Owner's Manual (KPH-4800/EW, KPH-4830/EW) (English, French, German, Spanish)	8-1.	CDE-437	Cord	
3.	CHD-870		Styro foam	8-2.	CNF-111	Strap	
4.	CDK-081		Cord Assy	8-3.	CNF-382	Lever	
5.	CNG-505		Holder	8-4.	CNW-642	Holder	
6.			Cover	8-5.		Screw Kit	
7.	CHD-872		Carton (KPH-4800/EW,ES)	8-5-1.	CBA-028	Screw for Strap	
				8-5-2.	NF40FMC	Nut	
				8-5-3.	NF50FMC	Nut	
				8-5-4.	PMZ50Y160FMC	Screw	
				8-5-5.	WS40FMC	Washer	

QUESTIONNAIRE

MODEL _____

One Model per questionnaire

Dear Servicer,

Thank you for your cooperation in the post-sale service of Pioneer products.

This questionnaire is used as a tool to improve the serviceability of our products and service manuals. Please evaluate this model and service manual by answering the following questions. Your ideas may be realized in our future products. Your answers will be appreciated. Thank you.

PIONEER ELECTRONIC CORP.

T. Nakagawa, Manager, Service Section, International Division

1. SERVICING EVALUATION	Circle applicable number:	Good	Fair	Poor
a. Disassembly/Re-assembly:		1	2	3 *4 *5
b. Circuit Checks:		1	2	3 *4 *5
c. Replacement of Parts:		1	2	3 *4 *5
d. Adjustment (s):		1	2	3 *4 *5

* If (4) or (5) was circled, please be specific.

e. Your advice, opinion or ideas related to servicing this product.

2. SERVICE MANUAL EVALUATION

a. Circuit & Mechanism Description

b. Circuit Diagram

3. OTHER

Please describe other areas of servicing which you may find difficult.

Completed by :

Date :

Company Name :

Address :

City/State/Zip :

Please send this form filled to the distributor in your country.